AN INTRODUCTION TO ECONOMIC THEORY

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PREFACE TO THE EIGHTEENTH EDITION

Since the publication of the first edition of this book, many changes have taken place in almost all branches of the theory of economics, and two developments, one on the theory of Imperfect Competition, and the other, Keynes's *General Theory of Employment, Interest and Money,* have led to the resurgence of new ideas. In particular, Keynes's *General Theory* has exercised such a great influence on the growth of current economic thought that a "new economics" is assumed to have been evolved. The impact of these two developments will be evident in this edition. The chapters on the Theory of Value have been entirely rewritten with quite a different emphasis. The Keynesian theory of employment with the extensions made by his followers has been analysed in a separate chapter, and the policy implications of that theory have also been discussed in other chapters. In view of the continuous expansion in the economic activities of the state, we have decided to treat this all important subject in a separate chapter, where the economic implications of Planning have also been reviewed. Extensive changes have also been made in the chapters devoted to the study of Public Finance.

Our thanks are due to Sri J. N. Basu, who has worked hard to get the book out of the press in time.

S. N. S.
S. K. D.

PREFACE TO THE FIRST EDITION

It is in the hope of providing an introduction to the elements of economic theory for the university students and the general readers that the book has been written. After the first war, countless monographs and technical articles in the various journals have extended the bounds of the economic science. This vast fund of research has not been integrated into the main body of the theory. The usual text-books deal only with the orthodox economic principles. Throughout this book, our purpose has to incorporate these extensions into the main body of the economic theory, merging the newer with the older doctrines.

Such a task, we are painfully aware, bristles with difficulties. But we have always tried to avoid the highly controversial issues. In our opinion, the treatment of such controversial topics in an introductory book like this will only lead to confusion among those for whom it is intended. So we have tried only to consolidate the older theories with the recent advances, without complicating the study by the introduction of technical controversies over the disputed points. We have not attempted to advocate or attack any particular school of economics. Our aim has always been to discuss in impartial terms the main principles of economics and to make the science of economics comprehensive, and at the same time understandable. We do not claim to have mastered completely the researches in all branches of economic theory; neither do we claim any originality for our treatment. Wherever possible, we have acknowledged our debts to the various authors in the foot notes. We should, however, like to emphasise our special indebtedness to the classical works of Marshall and Taussig, on which generations of Indian students have been brought up.

Our thanks are due to Messrs. Profulla Nath Mukherjee, M.A., B.L., and Sailendra Nath Mukherjee, B.A., for reading the proofs. We are also grateful to Mr. S. C. Ganguli, the proprietor of the Eastland Press for his great and unfailing patience.

July, 1934.

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S. K. D.

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CHAPTER I

DEFINITION AND OTHER ALLIED TOPICS

Definition of Economics : Economics is a study of the economic problems of a people living in a community. This is of course a statement of the obvious. What are "economic" problems? Is the problem whether to marry the girl selected by one's parents, or the girl of one's choice against the opposition of the parents an economic one? What about the problem of how to pass a loose evening? Is it an economic one? There are innumerable problems which face us at every step in life. Which one of them is economic, and which is not? Are there any special features marking out economic problems from non-economic ones? The problems which are economic in nature generally exhibit two characteristics. First, these arise from the fact that all of us feel wants, including the ordinary physiological wants as well as the refined desires which arise as a consequence of our living in the complex civilisation of to-day. Economic problems are concerned with the satisfaction of these wants. Another important aspect of the economic problems arises from the fact that the things or the resources in men, materials or time, which are capable of satisfying our wants are unfortunately limited or scarce. Here it should be noted that the word "scarcity" is used in a special sense. Mere limitation in supply does not make a thing scarce in the economic sense. A commodity becomes scarce only when its supply is insufficient to satisfy the aggregate demand for it. On account of the scarcity of resources, men are found to be engaged in various types of activities with the ultimate aim of gratifying their wants. The problems that centre round such activities are to be regarded as economic problems. To take an example, water is an essential human need. Generally the satisfaction of this want may not constitute a problem. In places by the side of a flowing river, the supply of water is unlimited in relation to the demand. Hence the satisfaction

of this want does not constitute a problem in those areas. But to a city-dweller, the supply of water is no longer unlimited. It has become scarce in relation to the huge demand created by the existence of a large population. Hence the problem of satisfying this want for water has become an economic one. Economics is, therefore, a study of "actions which make the satisfaction of wants possible."

Many classical writers defined the subject in another way. According to them economic activities are to be differentiated from other activities by the motive inspiring them. Economic activities are those which are guided mainly by the motive of self-interest as distinguished from other motives like religious devotion, philanthropy, etc. Some among these writers interpreted their subject in such a way as to give rise to the idea that the economists were not concerned with the activities of ordinary men, but of some "economic man", a nasty person whose sole aim in life was the calculation of monetary loss or gain. This view has long been abandoned by the economists. We study the activities, not of some imaginary economic men, but of ordinary men and women working under the impulse of a variety of motives. In fact, the motive behind the activities is no longer of any concern to the economist. We are concerned only with those human activities which are undertaken for the purpose of satisfying our limitless wants by means of the limited resources at our disposal.

Some ancient writers defined economics as the science of wealth. Adam Smith, the father of modern economic theory, defined economics as a subject which was concerned with "an enquiry into the nature and causes of the Wealth of Nations." This definition gave rise to serious misconceptions, especially at the hands of Carlyle, Ruskin, and other literary writers of the 19th century. The popular meaning of wealth is riches or an abundance of money. So it was thought that economics was concerned only with the acquisition of riches or money. As such, it was regarded as a "dismal science". But these writers misconceived the real scope of economic studies. In Economics, the word "wealth" is used in a special sense. It refers, not to money, but to those

Economics is the science of wealth.

scarce goods and services which are used to satisfy the wants of the people. Economics studies the various ways of producing, exchanging and distributing these scarce goods and services in response to the wants of the people. Wealth is a means, not an end. We fix our attention on wealth because we want to study those human activities which centre round wealth. We are not concerned with wealth, but with human activities. The emphasis has, therefore, been shifted from wealth to human activities. Economics is still now regarded as the science of wealth. But it is "on the other, and more important side, a part of the study of man."

The original meaning of wealth was well-being or welfare. It was naturally argued that the purpose of our study is to further human welfare through an analysis of the activities that centre round wealth. People desire wealth because it will promote their well-being or welfare. Since wealth usually refers to the material means of satisfying human wants, some writers have also defined economics as a study of the causes of material welfare.[1]

Is economics a study of the causes of material welfare?

This definition has been criticised in recent times by Prof. L. Robbins. According to him, the borderline between material and non-material things is not always clearcut. There are many things which satisfy our wants and which are scarce in supply. But these are not material in any sense. "The services of the opera-dancer are wealth. Economics deals with the pricing of these services, equally with the pricing of the services of a cook." But these services are not "material" in any sense. Economics is, therefore, concerned not only with the "material" causes of welfare, but also with immaterial things. Prof. Robbins has also criticised the connection that is sought to be established between economics and welfare. According to him, many economic activities do not conduce to welfare. The activities concerning the manufacture and sale of alcoholic drinks are economic activities. These satisfy human wants, and are concerned with the production

[1] Cannan., *Wealth*, p. 17.

and distribution of scarce goods. But these activities do not promote human welfare on many occasions. Secondly, welfare cannot be quantitatively measured. Two persons may be paying the same price for a commodity. But we cannot conclude from this fact that they derive the same utility from the commodity, or that their welfare increases by the same amount. The first individual may be rich, while the second may be poor. Money is not a satisfactory measure of welfare. So it is not possible to equate the welfare of the different classes of people. Lastly, this type of "welfare" analysis implies a value judgment,—that welfare ought to be maximised. But economics is not concerned with ends. It should discuss what is, not what ought to be. It is neutral between different ends.

Economics studies the implications of scarcity.

Another definition: According to Prof. Robbins, the main concern of the economist is neither with "material" means, nor with "welfare". "Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternate uses."[2] This definition starts from three basic postulates. First, men feel wants, and there is no limit to their wants. Second, the time and the means available to satisfy these wants are limited, or scarce. Last, these scarce resources can be utilised for alternative purposes. We can make either more butter or more guns. But we cannot have all we want of both. Our wants are unlimited, but nature is niggardly and life is short. Since the people cannot satisfy their wants with the scarce time and means at their disposal, a problem arises for everybody,—which wants to satisfy and which to forego. Everywhere we turn, if we choose one thing we are forced to sacrifice other goods. Hence there arises a problem of choice,—of selecting the uses to which we shall put the scarce resources. In order to enable us to choose effectively, there must be some kind of pricing process. Values must be set upon the available resources so as to restrict their use to the most urgent purposes. This pricing process alone forms the subject-matter of economics. The economist thus studies the

[2] *Nature and Significance of Economic Science*, p. 15.

implications of choice between different ends. But he is not concerned with the ends or the means. His subject is scarcity. The problem of economics is simply the problem of "economising."

Apart from the defects inherent in earlier definitions, the main reason for limiting the subject in this way lies in the fact that if the economists confine themselves to this purely pricing process they will be able to deduce valid scientific generalisations. Since economics is a science it must remain neutral between different ends, and must study what is, rather than what ought to be. It must also be capable of yielding *a priori* definite results, containing scientific truths. If economists venture from a study of the disposal of scarce goods, their labour will not yield results which are scientifically true and capable of exact measurement. A true science seeks truth for its own sake, and studies what is about a subject, not what ought to be. Hence Prof. Robbins calls upon other economists not to forsake the true and scientific path, and not to spend their time on subjects remotely connected with the main theme. It remains to add the difference between the two types of definition. The first definition is concerned with a particular kind or department of human activities. The second focuses attention on a particular *aspect* of human activities, —activities undertaken under the influence of scarcity.

The economist is, therefore, forbidden to pass any judgment on any matter. He cannot "furnish a body of settled conclusions, immediately applicable to policy." His role is that of an expert who can predict correctly the consequences that are likely to follow particular lines of actions. He can state the implications of any change in our choice regarding the disposal of scarce resources. But he cannot judge the desirability of these actions or policies. He can contribute very little to the ultimate solution of the particular problems of life. He cannot, for example, say that a particular case of state intervention is desirable or not. All that he can do is to point out the various implications of this policy.

The question then arises: is it desirable that economists should confine themselves merely to a discussion of the pure

pricing process? Should they remain secluded in the pursuit of truth for its own sake, giving up all intention to take part in the determination of policy? It is, of course, true that the study of the pricing process has yielded valuable results, and further development along these lines is also necessary if the economist is to play the part of an expert discussing the implications of different policies. One's desire for scientific rigour may lead one to restrict the scope of the subject in this way. But almost all economists (including Prof. Robbins) have trespassed over the frontier which divides pure economics into a discussion of the ends themselves. Moreover, such a limitation of the subject carries with it serious dangers. There is a fundamental distinction between the natural sciences and economics. The student of physics or chemistry can study his subject solely with a view to arrive at the truth, leaving the question of the practical application of results to others. But the economist studies his subject not only to know the truth for its own sake, but also to provide a technique for the solution of the great social problems. The study of economics began as a practical subject concerned with the improvement of the material conditions of the people. "When we watch the play of human motives that are ordinary,—that are sometimes mean and dismal and ignoble—our impulse is not the philosopher's impulse, knowledge for the sake of knowledge, but rather the physiologist's impulse,—knowledge for the healing that knowledge may help to bring."[3] Knowledge in economics is chiefly valuable in so far as it is "fruit-bearing" rather than "light-bearing." Prof. Robbins deplores that the borderlands of economics are the happy hunting ground of the charlatan and the quack. If that is so, they ought to be ousted from this position. And only the economists can and should oust them as they alone possess the necessary scientific training. Someone, and someone necessarily equipped with proper technique, should present before the public the alternative possibilities of practicable achievement. As Mr. Paul Streeten has concluded in a recent article,

True scope of economics.

[3] Pigou. *Economics of Welfare.*

"Economists cannot and should not refrain from making value judgments if their studies are to be more than a purely formal technique of reasoning, an algebra of choice. The technique, the algebra, is important and ought to be as scientific as possible, but it is significant only as means to a study of wealth and welfare and of the ways to improve them."[4]

Is Economics a science? For a long time there was some controversy over the question whether economics is a science or an art. The dictionary meaning of the term, "science" is that it is a body of systematized knowledge concerning any particular department of nature, whether external or internal to man. It studies uniformities pervading a department of nature and tries to find out generalisations which we call laws. Physics is a science; it studies certain uniformities regarding the external universe. Psychology is a science which studies the uniformities of the mental world. Economics studies the uniformities which underlie human activities in the ordinary business relations. It investigates the possibility of deducing generalisations as regards certain activities or behaviour of a group of human beings. Hence it is a science.

Meaning of the term "science."

The natural scientists deal with quantities which can be definitely measured. They can conduct experiments, and verify their conclusions. Economics also deals with that part of man's actions which can be measured by the measuring rod of money. Of all social sciences, economics is thus the most exact, because none of them has got any external measure to make possible a definite quantitative measurement. But it should be noted that such measurement of human motives can only be approximate. Human motives cannot always be accurately measured. Thus though the most perfect of all social sciences, economics is not as exact as the physical sciences, because it deals with human motives which are very complex. The measurement of human motives by money may at best be roughly approximate, but

[4] P. Streeten. "Economics and value judgments" in the *Quarterly Journal of Economics*, Nov. 1950. p. 595.

is never accurate; whereas the laws of physical sciences are capable of accurate quantitative measurement.

The claim of economics to be regarded as a science has been denied on the ground that the materials which form the basis of economic studies are not capable of yielding universally valid generalisations or laws. The physical sciences have developed a large body of laws possessing universal validity, and capable of quantitative measurement. But economists cannot claim precision for their laws. As men have free will, there is no guarantee that they will behave similarly under similar circumstances. But in spite of this it is possible to frame useful generalisations on three-fold grounds. First, all the experiences of a man do not come within the sphere of his choice. We cannot decide to feel pleased or sorry. Nor can one prevent oneself from getting satisfied if one goes on eating. Much of such uncontrollable experiences form the basis of economic laws. Secondly, some of our economic experiences are governed by laws of external nature beyond our control, *e.g.*, the law of Diminishing Returns. Thirdly, free will does not mean that men act unreasonably. Even if they do so, we are in a position to foretell the course of their activities by means of the mathematical law of probability. But on the whole, men behave reasonably. We usually buy a thing where it is cheap. Because of this, we can predict the future course of human activities, and frame general laws.

Though economic motives are variable, yet by considering average behaviour, we can deduce principles.

There is no doubt that economic prophecies are often found to be falsified by subsequent events. The reason for this must be sought, not in the unscientific nature of economic studies, but in our ignorance of the causes at work. The laws of biology or the meteorological forecasts are not always borne out by subsequent events. But no one would, on that ground, deny that biology or meteorology was not a science. The onset of a trade depression can often be predicted a much longer time in advance than the coming of a cyclone. The task of the economist is the same as that of the natural scientists,—to apply the processes of sustained and

disinterested argument to the data of observation, and to attempt the determination of general laws of all events. Hence the claim of economics to be regarded as a science cannot be denied on the ground that economists lack precision and prophetic power.

Nature of economic laws : Every science has its laws. Economists have also formulated some laws. What is the nature of these laws? The term "law" has got several meanings. It may mean a rule established in a community, permitting or prohibiting a course of action. Its best example is the common law of England. Secondly, it may denote a rule of procedure such as the laws of cricket. Thirdly, a law may mean an act passed by the legislature. Lastly, it may mean a statement of causal relationship between two groups of phenomena, *e.g.*, the laws of physics.

The different senses of the term "Law."

An economic law is a law only in the last sense. It is a statement of tendencies; a statement that under certain conditions, we should expect a definite course of action from a given set of facts. An economic law affirms that if a particular cause exists, a definite result may be expected to follow. All scientific laws are laws in the same sense. If there is a combination of hydrogen and oxygen, other things being equal, we get water. So also in economics, other things being equal, if the price of a commodity rises, the demand for it will fall. If a law of chemistry be a natural law, an economic law is also a natural law in the same sense.

But the laws of economics are not as exact as the laws of natural sciences. The latter deal with atoms and matter which are constant units. But the economist deals with the activities or behaviour of men. A group of men will not always act or behave in a similar way in response to a particular cause. Hence any general statement about the course of their activities may not always hold good. Economic facts can be modified by human efforts. But the attributes of an atom cannot be so modified. Hence an economic law is not as exact as a law of physics.

"The laws of Economics are to be compared with the laws of tides rather than with the simple and exact law of gravitation."[5] Human nature is very complex and the action of human beings is variable and uncertain. Economic laws, being based on human activities, cannot, therefore, be exact under all conditions. The law of gravitation states that other forces not interfering, two bodies will be attracted towards each other according to a certain ratio. This law of gravitation is so very exact that mathematicians can calculate beforehand the movement of the heavenly bodies; and the exact position of these bodies can be predicted many years beforehand. These calculations and predictions are seldom found to be wrong. Economics does not possess any law which is so much precise and exact.

Economic laws are not as exact as the physical laws.

Economic laws may, however, be compared with laws of tides. The laws of tides explain how there is a rise and fall of tides twice a day under the influence of the sun and the moon, how there are strong tides at new and full moon, etc. Thus the science of tides can predict at what time the tide will *probably* be the highest on any day at the Howrah Bridge. It has to use the word *'probably'* because the tide may not come at the expected hour owing to many unforeseen circumstances. There may be a strong wind in the Bay of Bengal which may make the tide at the Howrah Bridge quite different from what was expected. In human activities, too, there are many unforeseen circumstances, as a result of which the expected course of action may not happen in the regular way.

Economic laws essentially hypothetical : "Economic laws" writes Seligman, *"are essentially hypothetical"*.[6] All economic laws contain the following qualifying clause "other things being equal", *i.e.,* we assume that from a given set of facts, certain conclusions will follow, if no other change takes place in the meantime. But other things are not always equal and consequently in economics, definite

How far are economic laws hypothetical?

[5] Marshall. *Principles of Economics,* p. 32.
[6] Seligman. *Principles of Economics,* p. 26.

conclusions cannot be predicted from a given set of facts. Economic laws are, therefore, described as hypothetical,—hypothetical because their truth and operation depend upon so many factors which are variable and imperfectly ascertainable. Take for instance, the law of Diminishing Utility. It states that with every increase in the stock of a commodity possessed by a person, the marginal utility of that commodity to that person diminishes. But the law cannot state exactly at what point utility will begin to diminish. It may happen that the utility may actually increase if the commodity suddenly becomes more fashionable.

But the laws of all sciences are, more or less, hypothetical.

But it does not follow that because an economic law is hypothetical, it is unreal or useless. The laws of all other sciences are also hypothetical. Every science assumes certain causes and draws certain generalisations from those causes, assuming that nothing changes in the meantime. The action of the cause in question is supposed to be isolated and conclusions are drawn on the hypothesis that other causes are not present. In this sense all laws are hypothetical. In physics, it is stated that masses attract each other with a certain definite velocity. But in actual life, that may not always be the case. Bodies do not always fall to the ground, as expected under the law of gravitation. Their fall may be retarded by atmospheric pressure. Oxygen and hydrogen, when mixed together, will be turned into water under a particular pressure and temperature. If the pressure and the temperature are different, they may not form water. No one has argued on that ground that the law of gravitation or the laws of chemistry are unreal or useless. Owing to the complexity of forces at work, the expected result may not always materialise. Thus all scientific laws are hypothetical. The only difference is that the hypothetical element is specially prominent in economics. In physics, though there may be a complexity of forces at work, they can be definitely measured, and the result predicted. In economics, many of the forces cannot be measured; hence no definite result can be predicted. Economic laws are, therefore, largely approximations.

We may, however, point out that all economic laws are not essentially hypothetical. There are some economic laws which may be regarded as true as the physical laws and there are others which are true like axioms. The law of Diminishing Returns is based fundamentally on causes which are external to man. The tendency to diminishing returns may be held in check for a time by inventions and by the application of scientific knowledge to agriculture; but diminishing returns would appear in the long run. So this law may be regarded as partaking of the nature of physical laws. Again, there are some laws which are axiomatic and need no proof. For example, the law that capital can come only from the surplus of income over expenditure, or the law that the standard of life of a class depends fundamentally on productive efficiency of that class is axiomatic in nature and can in no way be regarded as hypothetical.

Certain economic laws are, however, not hypothetical.

The methods of Economics : Every science has its proper methods of investigation. We shall now discuss what methods have been adopted by economists for conducting economic investigations. There are two methods by which a scientist may proceed in his investigation. They are known respectively as deductive or abstract, and inductive or historical methods. The deductive method consists in the following. First, the principal factors in operation in any field of investigation are determined. Then the consequences that will ensue from the operation of these factors under given conditions are deduced by a process of reasoning. The classical economists applied the deductive method in their investigations and tried to deduce the whole of economic science from certain generalisations about human motives and habits. They started from some generalisations about human nature, *e.g.*, men always try to buy in the cheapest market, etc. Taking these motives and facts to be universally true, these writers tried to formulate the probable economic actions of men and the laws which govern their activities. These conclusions and the method of forming them have been criticised by many writers. But the mistake of classical writers did not lie in

Deductive method.

the fact that they followed the deductive method, but in that they based their generalisations on insufficient data. They assumed too hastily that their abstractions always corresponded with facts.

Mathematical method.

One extreme variant of the deductive method is the mathematical method. Jevons argues that economics is essentially mathematical in character, taking the term mathematical to mean all enquiries that deal with quantitative relations. Economics deals with phenomena whose quantitative aspect is of fundamental importance and in those phenomena this method may be employed profitably. The chief advantage of such a method is that it leads to high standards of precision in abstract economic reasoning. Chances of mistake are few. Another advantage of this method is that it explains the relation of mutual dependence which may subsist between different phenomena, *e.g.*, supply, demand, and price. The chief defect lies in the fact that those who follow this method may be absorbed in the framing of intellectual toys and the real end may be forgotten in the intellectual gymnastics and mathematical treatment.

The inductive or historical method.

The chief critics of the deductive school are writers of the historical school, which flourished mainly in Germany. They employed the inductive method and developed the economic science from economic history. They collected particular materials from economic history or contemporary events, and drew general conclusions from them. These conclusions were further verified by reference to subsequent economic facts. The rapid advance in the science of statistics during recent years and the collection of data by governments and private individuals have enhanced the value of this method. From the data thus collected valuable and scientific conclusions have been drawn, thus making the science more accurate and perfect. But their criticism of the deductive method was often wrong. Of course, it is true that we must establish and know the facts first of all. No science can proceed without data or with incomplete data. The conclusions formed by general reasoning must also be verified by facts. To admit that is not to admit the uselessness of the deductive

method. "Facts do not speak for themselves. It is only by analysis, comparison, hypothesis and prophecy that they can be made to speak at all".[7] No science can proceed without the aid of reason and hypothesis. Without the aid of deductive reasoning the historical method runs the risk of remaining purely descriptive. It can serve only to accumulate a mass of unconnected and unserviceable facts. This school of economics has not, in fact, re-made the subject; it has only served to introduce a new spirit.

The use of both methods is necessary.

Modern writers are now all agreed that both these methods are partners, not rivals. The aim of the science is to discover economic uniformities, and it is usually right to follow any path or to pursue any method that is likely to lead to that end. "Induction and deduction are both necessary for the science, just as the right and the left feet are needed for walking." Both these methods may be profitably employed by economists, but in different proportions for different purposes.

All social sciences are inter-related.

The relation of Economics to other sciences : In modern times an increasing unity between different sciences is gradually being perceived. The point of contact between different sciences is becoming more pronounced and the relation of economics to sociology, politics, ethics, psychology, history and mathematics is now well recognised. The modern method of study is increasing specialisation and differentiation. In spite of the pursuit of this method, the possibility of a synthesis of all sciences under one system of philosophy is admitted, and is seriously attempted by some writers.

Sociology deals with *all aspects* of social life: Economics with only *one aspect.*

Economics and Sociology : Sociology is the general social science. It deals with the fundamental facts of all social life,—economic, political and historical, etc. Sociology is the science of the elementary principles of social union. According to Comte, Economics cannot claim to be a separate science; but must be included within

[7] Durbin—"Methods of Research" in the *Economic Journal,* June, 1933, p. 181.

Sociology. In reply to Comte, it is pointed out that the provinces of Sociology and Economics are quite distinct. Sociology is an all-comprehensive social science. It takes into account all the conclusions arrived at by different social sciences and utilises these premises for arriving at further conclusions. Sociology is not merely the sum of various social sciences, but it is a philosophy based on the results of all of them. Sociology is the fundamental social science, of which other social sciences are but differentiations. The scope of Economics is quite distinct from that of Sociology. It does not claim to be an all-comprehensive science. It is a branch of Sociology. Though a branch, its aims and scope are quite different from those of Sociology. It thus studies some distinct part of human life, not the whole of it. Its methods are distinct, its scope is distinct and its aims are also quite distinct. Though a branch of Sociology, Economics is thus a separate science.

Economics and Politics : Economics and Politics are both branches of Sociology. The connection between Economics and Politics is very close. Earlier writers used to regard Economics as a branch of Politics. The Greeks regarded Political Economy as the art of providing revenue for the state, and other writers, including Adam Smith, conceived Economics as an art to be employed for furthering the purposes of the state. The very use of the expression, 'Political Economy' shows the intimate connection of the science with Politics. The modern use of the term 'Economics' in place of 'Political Economy' is deliberate. The change indicates that its primary end has got nothing to do with the state. In spite of the deliberate use of the term "Economics", modern writers do not deny the relation of this science of Politics. This will be evident from the following considerations.

Politics deals with the state; Economics with wealth.

Economic institutions of a country depend for their progress upon the system of government. Every modern government is closely concerned with economic matters. All modern legislatures are preoccupied with questions of dispute between labour and capital, the imposition of tariffs, the

tackling of the unemployment problem and many other industrial and commercial matters. All economic activities are carried on within the state according to the laws laid down by the state. Problems of individualism and socialism point to the close connection between the two sciences. These problems are dealt with both in Economics and Politics, so inseparable are the economic and political aspects of the problems. Secondly, the political organisation of a country is often a reflex of its economic organisation. The Aristotelean classification of the states into tyranny, oligarchy and democracy was based on wealth. Political movements are profoundly influenced by economic causes. State-socialism, Syndicalism, Fascism, Bolshevism and many other movements are not merely economic movements, but are political movements as well.

The economic institutions are dependent on political organisation.

From all these considerations, it is evident how much closely connected both these sciences are, though their departments of enquiry are separate and distinct.

Economics and Ethics : The connection between these two subjects is also very close. Ethics furnishes a standard or ideal to which economic institutions and activities are to approximate. The discussion of the relation of wealth to welfare shows the essentially ethical bent of the science. Economics is the handmaid of ethics and the end of all economic activities is to promote human welfare. Ethics thus furnishes a standard by which to guide our activities.

Economics is the handmaid of Ethics.

Ethics, nonetheless, is indebted to Economics. Economic conclusions give certain data for the study of Ethics, and from these data Ethics draws further conclusions. For example, Economics finds out from observation that indiscriminate relief to the poor under certain circumstances promotes idleness and destroys self-reliance. Ethics draws the conclusion from this datum that indiscriminate help to the poor is not always ethically justified and lays down certain rules for giving charity to the poor. Thus the relation between Ethics and Economics is very close.

Economics furnishes data with which Ethics builds.

Seligman[8] rightly remarks, "Economics, like Ethics, is primarily a social science, the true economic action must, in the long run, be an ethical action."

The scheme of this book : After stating the definitions of certain preliminary concepts, we propose to discuss the meaning and significance of the national income of a country. Many of the important problems in economics involve the conception of the National Income, and an understanding of the factors determining it. We shall then examine the way in which different factors of production co-operate in producing the National Income with a description of the structure of modern industry. Our next task will be to investigate the forces that determine the composition of the National Income as also the pricing of particular goods and services, to be followed by a discussion of the pricing of productive factors. Next, we shall take up the discussion of factors which influence the fluctuations in the level of the National Income, finishing with some chapters on the theory of international trade and foreign exchange. The whole discussion will be rounded off with the examination of the part played by the state in the modern economy, and of the socialistic system.

[8] Seligman. *Principles of Economics,* p. 35.

CHAPTER II

ON SOME DEFINITIONS

Goods : Anything, material or immaterial, which can satisfy human wants is to be called goods. Goods may be *free goods* or *economic goods. Free goods* are those goods whose supply is more than sufficient to satisfy the demand for these goods. The sunshine and the rain, the air, the water of the ocean and the sands of the desert are examples of such free goods.

Economic goods.

Goods, the supply of which is scarce in relation to demand, are *economic goods. Scarcity does not mean mere limitation in quantity; it means limitation in relation to demand.* When the available supply of an article is not sufficient to satisfy the total demand, it becomes scarce in the economic sense. The line between free goods and economic goods is thus not a definite one. Water in the homes of a modern city is an economic good, while it is a free good to the inhabitants near the river. Thus under the complexities of modern life, more and more free goods are passing into the category of economic goods. Scarcity is thus not a fixed quality, but a changing one reflecting every shift of human wants.

(*a*) Utility, (*b*) Scarcity, (*c*) Transferability.

Wealth : Wealth is synonymous with economic goods. In order to be classified as wealth, a thing must possess *four* attributes:—(*i*) it must have utility, *i.e.*, it must satisfy a human want; (*ii*) it must be scarce in relation to demand; (*iii*) it must be transferable; (*iv*) and it must be external to man. Thus the term, "wealth", includes not only those material goods, which are transferable and external, such as land, furniture, houses, etc., but also the non-material goods which are external to man, and transferable, *e.g.*, the goodwill of a business, copyright of a book, patents, etc. But it excludes those material goods (*e.g.*, fresh air), which are not transferable, and those non-material goods

(*e.g.*, personal qualities like the dexterity of a mechanic) which are not external to man.

The correlation between wealth and want must not be forgotten. A thing is wealth because a particular human being or a class wants it. *The psychological attitude of man is the real determinant of wealth.* If the psychological attitude changes, the character of wealth would also change. Thus *Tagore's Poems* may not be wealth to the man who is devoid of any education, but to an educated man, they constitute an important part of his wealth.

The term "wealth" is relative.

Collective wealth : It consists of those external, transferable goods, both material and non-material, which are public property, and are enjoyed by all the members of the public. Such things as roads, public buildings, art galleries, government offices, etc., belong to this class.

National wealth : It includes the individual as well as the collective wealth of the country. To compute national wealth, we must add the aggregate wealth of all members of the community, plus the public property of all kinds, material and immaterial. But we must recognise that there is also some negative wealth. For example, though the government loanstock constitutes wealth to the individuals, yet it is a form of national debt. Against many public works must be offset the heavy negative wealth of public debts. We should, however, add the debts owed to the citizens by the members of foreign countries.

Utility : We have defined wealth as consisting of those goods which possess utility. What is utility? The dictionary meaning of "utility" is usefulness. Air and water are stated to possess high utility in this sense. But in economics, the

CLASSIFICATION OF GOODS.

Goods
- External
  - Material
    - Transferable, *e.g.*, house, bread.
    - Non-transferable, *e.g.*, air, climate.
  - Personal
    - Transferable, *e.g.*, goodwill of a business.
    - Non-transferable, *e.g.*, business connection.
- Internal—Personal—Non-transferable, *e.g.*, skill of a surgeon.

Wealth consists of external-material-transferable and external-personal-transferable goods.

term is used in a different sense. Utility means the capacity to satisfy wants. To say that a thing possesses utility means that it is expected to satisfy a given desire. We may desire a thing because it is useful; but it need not always be the case. Nor it is true to say that the utility of a thing is the satisfaction that we get from the thing. Desire and satisfaction may not always balance. Hence utility signifies not usefulness, nor satisfaction, but the intensity of desire for a thing.

Utility of a commodity cannot be directly measured. We cannot define utility in physical terms as we can define food as consisting of so many calories. We cannot compare and make an accurate estimate of our mental states. But we can compare the utility of one commodity with that of another, or with that of money, or the utilities of two things may be compared as being in the same ratio with two sums of money. "If we find a man in doubt whether to spend a few pence on a cigar or a cup of tea, or on riding home instead of walking home, then we may follow ordinary usage and say that he expects from them equal utilities".

Lastly, it should be pointed out that in economics we use the word, utility, without any ethical implications. The desire the intensity of which we want to measure may be noble or ignoble; the economist is concerned with the existence of the desire, not with the character of the desire.

VALUE

Value-in-use and value-in-exchange: The term 'value' may mean any of the two things. It may indicate simply utility, or usefulness. Or, it may mean, 'power in exchange', *i.e.*, its purchasing power over other commodities. The first interpretation is known as value-in-use: the second as value-in-exchange. In order to command some value-in-exchange, a thing must not only possess value-in-use, but it must also be limited in supply in relation to demand. In economics, we are mainly interested in the value-in-exchange of a thing.

Value-in-use.

Value-in-exchange.

Some commodities possess great value-in-use, yet they may not command a high value-in-exchange. For example, water is very useful to human beings. Strictly speaking it is more useful than gold, but curiously, it does not command as great a purchasing power as gold does. That is, though water possesses more value-in-use than gold, yet it has less value-in-exchange than the latter. The reason is obvious. The supply of water is not limited in such a degree as the supply of gold is. Hence gold commands more value-in-exchange than water. As we have stated, to possess value-in-exchange, a thing must not only possess value-in-use, or utility, but also it must be limited in supply. The more the supply is limited, the greater is the value, other things being equal.

Value and price : Value, as we have already pointed out, means power-in-exchange. Value is thus a ratio between two commodities. The value of one maund of rice is the amount of other commodities that can be obtained in exchange for it. Thus the value of rice may be expressed in terms of wheat, jute, cotton, etc., or any other commodity, when it is exchanged for any of them. When value is expressed in terms of money, it is called *price*. When a maund of rice is exchanged against money, the ratio of one maund of rice with the money-units is known as price.

In real life, all transactions are conducted in terms of money. So, instead of knowing the *value* of a thing in terms of *other* commodities, we know its *price* in terms of money.

Can there be a general rise or fall of prices, or of values?

There is another thing which must be noted in this connection. There can be a general rise or fall in the prices of all commodities, but there cannot be such a thing in regard to the values of all commodities. For the prices of all things depend on two factors:—the total volume of all commodities that are to be exchanged against money, and the total volume of money in circulation. If the volume of money in circulation increases, the prices of things in general will rise ; conversely if money in circulation decreases, other things being equal, the price-level will fall. It means that the prices of all things will fall, though, of course, not

to the same degree. This general rise or fall in the prices of all things is a constant phenomenon. Immediately after the war, the prices of all things rose to giddy heights. *But there cannot be any general rise or fall of values of all commodities.* For, value is a ratio. Let us take a concrete example. If the value of rice rises, that means that more goods can be obtained in exchange for rice. That is, the value of other things has fallen in terms of rice. If the value of rice in terms of wheat rises, that indicates that more wheat can be obtained for rice. It also means that the value of wheat has fallen. When the price-level rises, though the value of other commodities has risen in terms of money, the value of money has, on the other hand, fallen in terms of other commodities. Hence there cannot be any general rise or general fall in the values of all things.

CONSUMPTION

Consumption does not mean the destruction of matter. Man cannot destroy matter just as he cannot create matter.

Consumption consists in the using up of utilities.

Consumption consists in the satisfaction of wants. A man consumes only the utilities that production has added to material things. Consumption uses up utilities, but not matter. Thus when we wear out our clothes, or live in our houses, we are said to consume them. "The carpenter is just as much a consumer when he hammers nails into the floor-boarding, as is the gourmet who enjoys an expensive repast, the preparation of which has involved the services and labour of countless workers in many parts of the world."

Consumption provides the mainspring of all human activities. The forces that set the wheels of the productive system going are furnished by human wants. A man's wants find outer expression in the various offers of money. The consumers vote for the choice of certain kinds of goods, and for the rejection of others. And by casting such votes, they control the direction of productive

Relationship between consumption and production.

activity. The making of goods follows where the spending of money leads.

While wants give rise to activities, the reverse is also true, especially in modern times. In the early stages of society, the physical cravings supplied the motive to all human efforts. The savage would not take up any activity unless he was impelled by the necessity of satisfying some elementary wants. But as civilisation advances, while the influence of wants in guiding human efforts still remains, yet in many cases, human activities, instead of assuming a passive role, often give rise to new wants. The invention of cycles, or telephones has not been undertaken in response to a determinate and known human want. But their invention, by familiarising the people with their uses, created new classes of wants. Here, as in many cases, production gave rise to increased consumption. Hence the relationship between consumption and production is one of inter-dependence, rather than one of cause and effect.

But in modern times, productive activity in many cases gives rise to new wants.

Necessaries, comforts, luxuries : The distinction between these three classes of wealth is not easy to draw. By some, especially the ancients, the distinction was made on an ethical basis. Necessaries consisted of those things which were conducive to a life of plain living and high thinking; while luxuries were said to degrade a man. The distinction has, sometimes, been made on the ground of "productive" consumption. *Necessaries* are regarded as those things which are essential to the maintenance of life and efficiency. As such, necessaries may be divided into two classes. (*a*) *Necessaries for life.* These are limited to those things which are essential for bare subsistence. (*b*) *Necessaries for efficiency.* These consist of those things, which, in addition to the necessaries of life, enable men to keep themselves fit and efficient.

Necessaries for life and necessaries for efficiency.

In addition to these two classes of necessaries, a third class must also be recognised:—the *conventional necessaries.* They consist of those things which are really not necessary for maintaining life or efficiency, but which have become so through force of habit,

Conventional necessaries.

and "which a person will insist on buying before he has completed his supply for necessaries." Familiar examples are tobacco, tea, some indulgence in fashionable dresses, etc.

(*c*) *Comforts.* These stand midway between the conventional necessaries and luxuries. They consist of those things of life, which increase the efficiency of a person, but the value of the increase in efficiency is generally less than their cost.

Comforts.

(*d*) *Luxuries* are those things, the consumption of which satisfies a superfluous want. Their consumption does not increase, but may, in many circumstances, decrease the efficiency of a person.

Luxuries.

Necessaries, comforts, luxuries are relative terms. Differences of climate and differences of custom make things necessary in some places, but superfluous in others. A shirt is a necessity for a western labourer, but is often a luxury to an Indian worker. Hence every estimate of necessaries must be relative to a given time and place. The conventional necessaries vary in different societies, and in different social groups. The *hukkah* is a conventional necessity to the Indian ryot, while a cup of tea finds a welcome smile in many middle class homes. In drawing the dividing line, we must also pay regard to the occupation of the person. A thing which is a comfort to one person may be luxury to another, and a necessary for efficiency to a third. A motor car is a luxury to a poor man, necessary for efficiency to a doctor, and a comfort to many hearts.

All these terms are relative.

Is the consumption of luxuries economically justifiable? The very word luxury carries a note of condemnation. But the economist is not concerned with that. For purposes of analysis, luxuries may be divided into two classes:—harmful and harmless luxuries. *Harmless luxuries* are those things (*e.g.*, expensive dresses) whose consumption does neither increase, nor decrease a person's efficiency. *Harmful luxuries* are those things (*e.g.*, wine) which materially diminish a person's efficiency. The consumption of harmful luxuries is not

When is luxury justified?

justifiable. But what about the harmless luxuries? It is sometimes assumed that luxuries are justifiable because they "make work," *i.e.*, they give additional employment to labour. But there is no foundation for this view. The money that is now spent on luxuries, would have been spent on the purchase of other things or invested (in the absence of luxuries). That would have provided work, possibly of a different kind, for labourers. The economic justification of luxuries lies in the fact that the desire for luxuries has often impelled a man to seek wealth, and in seeking it he indirectly confers great benefit on the society. The lure of luxuries in life is a perpetual incentive to effort. The incentive may be coarse, but it works and enriches the productive capacity of the community. Moreover, the desire for luxuries has been responsible for the growth of the fine arts.

PRODUCTION

In ordinary use, production means the creation of material things. But man cannot create matter. It is given by Nature. What man can do is to change the shape or form or size of the material things given by Nature. We cannot create iron ores or coal. We can only utilise them. Coal that is under the bowels of the earth is brought above the surface and is used in various ways. That is what we mean by "the production of coal". The labour of man cannot create even one atom of matter. Hence production cannot mean the creation of material things.

Man does not produce matter, but only utility.

Production, in economics, means the creation of utilities. Human labour changes matter so as to make it more valuable. The timber in the forests is certainly valuable. When it is brought to the cities it becomes more valuable. More utility has been added to the timber. So the act of transferring it from the forests to the cities is a productive act. Further, when the timber is used by men and made into chairs, tables, etc., the latter are more valuable than the timber. Hence this act is also productive.

The utilities that are created are of three kinds:—*form, place* and *time* utilities. A change in the form, shape, weight, colour, smell or any other quality of a thing which imparts some utility to that thing, which increases its capacity to satisfy human wants, is the creation of *form utility*. Further, a thing may be made more useful by bringing it from the place where it is abundant, to a place where it is rare. As a result, its utility increases. This kind of utility goes by the name of *place utility* . Traders and merchants create place utility. Lastly, a thing may be plentiful in one season of the year, but scarce in another season, or a thing might be abundant in a good year, but scarce in a lean year. If the commodity in question is preserved from one season to another or from one year to another, a higher utility is imparted to that commodity. This preservation creates *time utility*.

Three kinds of utility.

Productive and unproductive labour : The idea that some kinds of labour are of special significance while others are not is as old as Aristotle. He classified certain functions, *e.g.*, agriculture as "natural": while mercantile trade and exchange were regarded by him as "unnatural". This idea appeared in different forms with different writers. The Mercantilists, for example, regarded all foreign trade which resulted in a large import of specie as the best of all occupations. The Physiocrats, the procursors of the modern economists, however, looked upon the merchants as belonging to a "sterile" profession, which did not yield any net product or surplus. According to them, agriculture was the productive occupation *par excellence,* because Nature's bounty yielded a large surplus of production. The concept broadened at the hands of Adam Smith who classified not only agriculture, but all trade and other allied professions as 'productive. According to him, *only such labour as turned out vendible commodities or material goods was productive.* Not only the manual labourers, but also those by whom the operations were guided and promoted—the foreman, the engineer and the manager were regarded as doing productive work. Even

Only labourers who produced material goods were considered productive.

then Adam Smith "excluded not only menial servants and some of the most frivolous professions such as players, buffons, musicians, opera-singers, opera-dancers; but also some of the gravest and most important such as churchmen, lawyers, physicians, men of letters of all kinds, even economists" presumably.

This distinction between productive and unproductive labour as based on the turning out of "material" goods, also appeared in the writing of J. S. Mill. But these writers failed to see that this distinction would lead to many inconsistencies. Let us take the case of musicians. The labour of a musician was regarded as "unproductive" because it did not result in the production of material goods. But the maker of a musical instrument was classed as productive. If those who used the instrument are regarded as unproductive, then why is the instrument made at all? And why regard the labour of producing it as productive? If the maker of the instrument is productive, its user must also be so. Man, as it has been stated, does not produce matter. What he does is simply to increase the utility of things given by Nature.

Labour directed towards the satisfaction of a want is productive.

The modern standpoint is that *all whose labour satisfy wants should be regarded as productive labourers.* "So long as a person who buys a thing or pays for a service really *desires* it, the labour which yields him the satisfaction is productive." The labour of a professor, a lawyer, a soldier or a judge is productive in this sense. Only persons who are to be excluded from the class of productive labourers are those who could not finish their labour, or who produced things for which there is no demand.

Is labour whose services do not contribute to welfare productive?

Now the question arises whether the labour of those who do not contribute to material welfare, whether directly or indirectly, are to be regarded as productive. Take, for instance, the maker of a quack medicine. Is his labour to be regarded as productive? Obviously yes, because so long as the purchaser wants that sort of thing and is willing to pay a price, he must be obtaining some satisfaction from it. If we once begin to exclude goods and

services which do not appear to us to promote economic welfare, we shall never know where to stop.

Factors of production : All productive operations are result of the co-operation of several agents. What are these agents or factors of production? The classical economists recognised three factors of production, *viz.*, land, labour and capital. Land in economics does not refer only to the surface of the earth ; it includes "the materials and the forces which Nature gives freely for man's aid in land and water, in air, light etc. By labour is meant any type of human activity, whether physical or intellectual, which is not undertaken for the sake of pleasure only. Everyone is a labourer, whether he is a mathematician or a cooli. By the application of labour to natural elements we obtain certain material objects, which are further utilized in production. These material objects which are embodiments of past labour and which help the present process of production are known as capital. But with the growing development of business organisations, the functions of a separate agent became quite clear. So a fourth factor was added to be known as organisation. The labour of directing and organising a business enterprise is called organisation. Organisation is of utmost importance in these days of mass production. The main function of organisation is to co-ordinate the different factors of production in proper proportions so as to get the maximum yield with the minimum of cost.

Modern economists have ceased, however, to make any distinction between land and capital. According to them, land is only one form of capital, and they do not accept the distinction made by classical economists between land and capital as valid.

CHAPTER III

THE NATIONAL INCOME

Cut your coat according to the cloth is an advice which is appropriate for many purposes. In studying his subject, the economist should also follow this advice, and first find out the size of the cloth. In other words, the starting point of economic studies must be the determination of the size of the cloth, i.e., the size of the national income of a community. An individual starts first with an account of his total money income and then studies how he can increase its size, and how he can distribute it on various items of expenditure so as to secure the maximum benefit for himself and his family. Similarly, as a social scientist, the economist also starts his studies with an account of the size and distribution of the national income. This provides the background for most of his discussions.

How is this national income defined? There are two ways to do it. We may define it as the sum total of all goods and services produced by the residents of a country during a given period, generally a year. This is the final-product total. A second way is to define it as the sum of the incomes earned during a given period by the factors of production, i.e. the landowners, labourers, owners of capital and businessmen. This may be said to be the "factor-payments total." The latter is the aggregate of all wages, *plus* net rents and royalties, *plus* all interest payments *plus* the profits of corporated and unincorporated businesses. Let us examine the implications of each of these two definitions.

Gross National Product (G.N.P.) : National Income has been defined as the sum total of the money value of all goods and services produced during a year. The labour and capital of a country, working on its natural resources, produce every year a certain amount of commodities and services of all kinds. The money value of this aggregate output is known as the Gross National Product (G.N.P).

In calculating Gross National Product, we must be sure to include only those items that represent a final good or service. We must avoid the dangers of double counting. For example, to print a book worth Rs. 9/-, paper of the value of Rs. 2/- may be utilised. Since the full value of the book is included in the calculation of GNP., the value of this paper must not be included as a separate item ; its value is already included in that of the book. To include the cost of paper in addition to the cost of the book will thus be double counting. In this case, paper is an intermediate product, not a *final* good. But the value of paper used in our homes for the education of our children should be counted in the GNP., as this paper is a final product. We must be careful not to include intermediate products like the flour made into cakes; or the steel used in manufacturing a motor car, or coal burned in the blast furnaces. We must include only the final products, i.e., products ultimately purchased by consumers. Thus from the value of the total output produced by a firm, we must deduct the value of the raw materials and other goods purchased by it from other firms and used up in production. It should be noted that we are using the yard stick of money value in determining the aggregate of such a great variety of commodities produced in a country. The final goods are valued at the market price if they are sold during the year. If not, they are to be valued at cost of production. It is of course true that money value is an inadequate measure of the national income. But it is the best of the measures we have got.

Net National Product : While the concept of Gross National Product is useful for some purposes[1], we are, however, interested in the Net National Product (NNP) for other purposes. The Net National Product is the *net* money value

[1] For example, for certain short-period purposes, the concept of GNP is perhaps the most useful of all measures. During a war, for ex., the gross total of all goods and services produced may be most significant. That some portion of this gross total should be set aside for depreciation can be partly or entirely neglected during such a period. Our buildings must be repaired from time to time, but not necessarily during a war. Moreover, it is not an easy task to calculate the exact depreciation allowance. It is easier to find out GNP than to determine NNP. Cf. Gilbert M. and Jassi G. "National Product and Income statistics as an Aid in Economic Problems" in the *Readings in the Theory of Income Distribution*, pp. 47-48.

of the final goods and services produced in course of the year. The word, "net", means that in calculating NNP, we must deduct from the GNP a certain amount to compensate for the using up or depreciation of the assets of businesses. While production is going on the buildings and machineries are gradually wearing out, rusting or becoming obsolete. If a piece of machinery becomes partly worn out in the production of this years' output, we must deduct from the GNP a certain amount to provide for the depreciation of this machinery. Similarly, a factory may have a certain amount of stock of raw cotton on the 1st January, 1952, and may use a part of this stock plus any raw cotton purchased during the year in making textile goods. So that on the 31st December, 1952, its stock of raw cotton is less than that on the first day of the year. This fall in stocks must then be deducted from the Gross National Product before we can find out the Net National Product.

The Net National Product may be said to consist of (*a*) goods and services bought by consumers, (*b*) goods and services purchased by the government and (*c*) net additions to private investment.

The Factor-payments total : This sum total of the goods and services has been produced by the co-operation of the factors of production, and their money value is distributed in various ways among the factors of production. Hence the national income may also be regarded as the total of incomes received by persons supplying the services or resources used in production. These payments are generally grouped under four headings,—wages, rent, interest and profits. In computing the national income on this basis, care should be taken in respect of certain types of payments and of non-payments. The national income total cannot include all income payments received by individuals. National income is a measure of production, and should not therefore include those income payments for which no productive service is made in return. These payments which are not made in return for the making of goods or services are called "transfer payments." For example, the relief payments given by the government to the displaced persons are transfer payments as the receivers of such relief do not provide any service to the government in

return. Such transfer payments should be excluded from the national income total determined by adding the total payments received by the factors of production.

There is also a certain amount of income which is not paid out to any individual. For example, joint-stock companies are in the habit of not distributing the whole of their earned income among the shareholders. The undistributed profits should therefore be included in the national income. Or the government collects a considerable amount of taxes levied on the profits of joint-stock companies and this part of the profits does not become income payments. Thus we should include all profits, whether actually paid out to the owners or retained in the business. We should also include certain types of imputed payments, such as the annual rent of the house where the owner lives in his house etc.

Thus the national income is the sum total of (*a*) all wages, salaries and other supplementary incomes earned by all employees,(*b*) net rents of all individuals including the estimated rents of self-occupied houses, (*c*) net interests paid out to all private individuals, (*d*) net profits of businesses of all kinds including, (*i*) the incomes of one-man business like farmers, incomes of partnership concerns and of professional men like doctors, (*ii*) net earnings of joint-stock companies consisting of dividend payments, undistributed profits and corporate taxes.

What is the relation between the national income as consisting of earnings of all kinds (factor payments total) and the Net National Product (NNP) at market prices? The goods produced in the country are sold at market prices which cover the indirect taxes levied by the government. Thus the market value of the National Product exceeds the incomes paid to the factors of production by the amount of the indirect taxes. Let us suppose that the actual cost of producing a certain amount of output comes to Rs. 100,000/-, which is paid out to various factors of production as wages, rent, interest and profit. The government levies taxes amounting to Rs. 10,000/- on this output so that it sells in the market for Rs. 110,000/-. This is the market value of the output, while the income payments made on account of the production of the output is only Rs. 100,000/-. Thus

from the money value of the NNP at market prices we must deduct the amount of indirect taxes before we arrive at the national income as determined on the basis of factor payments.

Gross National Product at market prices—Depreciation = Net National Product at market prices. Net National Product at market prices—indirect taxes = National income (or National income at factor cost).

The Government sector: One major complication in framing the estimates of national income is introduced by the operations of the government. The government of a country collects a certain amount of money in taxes from the people, and spends large sums on goods and services and on various kinds of public works. Both these operations create difficulties for the calculation of national income. If the national income is to be calculated as the sumtotal of factor payments, should one include or exclude taxes collected by the government and the subsidies paid by it? Should each income payment be counted *before or after* deducting the taxes? Or if the national income be calculated as the sumtotal of final products, should it include all goods and services purchased by the government? Should one include the whole of the expenditure incurred by the government? Does it make any difference if some of the goods purchased by the government are not final products?

There are at least two views on the question whether taxes are to be included in the calculation of national income.[3] According to the first view, followed by Kuznets and the U.S. Department of Commerce, taxes are to be divided into two kinds:—indirect taxes (or business taxes in American terminology), and other taxes (personal or direct taxes). Indirect taxes, like the sales tax, the excise duties etc., are not supposed to come out of any particular factor payment; whereas personal taxes such as income taxes are

paid out of factor payments, *i.e.,* from the incomes of individuals. Hence in calculating the national income as the sumtotal of factor payments, these writers are inclined to exclude indirect taxes (since these are not paid out of incomes, but are merely additions to prices), and to include other taxes (since these are paid out of incomes). Another school of thought including Mr. C. S. Shoup[3] is inclined to make no distinction between direct and indirect taxes in calculating the national income. According to them, the first approach requires knowledge about what taxes do or do not come out of factor payments, and our present state of knowledge about the shifting of taxes is not sufficient to enable us to make this distinction. So either all taxes should be deducted or retained in calculating the total of factor payments. If all taxes are deducted, we must add the value of the final products supplied by the government. Or if no taxes are deducted, we must then subtract from the sumtotal the value of the product bought by the government that is only an intermediate product, not a final good.

The last statement about the distinction between a final product and an intermediate product with regard to the goods purchased by the government takes us to the second difficulty for calculating the national income as the sumtotal of final products. We have stated that care should be taken to include only the final products, and to exclude intermediate products to avoid the dangers of double counting. Are all items of government expenditure on goods and services to be assumed to be incurred on final products? Yes, according to the U.S. Department of Commerce and the governmental authorities in Britain, which are publishing regular statements of national income. Out of the total government expenditure, these authorities would exclude only those items that are transfer payments (*e.g.* relief payments, interest on government debts etc.). All other items of expenditure are to be included in the national income

total. But some economists have argued that not all goods bought or supplied by the government can be regarded as final product. Some may be of the nature of intermediate products, and hence should be excluded from the calculation of the national income. For example, the government constructs a road connecting distant villages with a main marketing centre. This road makes it possible for the agriculturists to bring their produce to the main marketing centre. It may then be regarded as an intermediate product which is utilised by private business for the speedy transport of crops. If we include the expenditure on the construction and maintenance of the road in the national income as a final product, we may be guilty of double-counting. The value of the transport is already included in the prices at which crops are sold in the market. Kuznets accepted this distinction between final products and intermediate products supplied by the government. But he assumed that that amount of government products whose value is equal to the amount of direct taxes should be regarded as final goods. An amount of government products equal to the amount of indirect taxes is taken to be intermediate products, and hence is excluded from the calculation of the national income. He also regarded the expenditure on construction done at or by the order of the government to be the expenditure on final products, and hence to be included in the national income. While there is some truth in these criticisms, the main difficulty has been with regard to the question, which item of government expenditure is to be regarded as being incurred on final products, and which is to be regarded as an intermediate product? Kuznet's distinction is clearly arbitrary, and it is this difficulty which has forced many authorities to include all expenditure (barring some transfer payments) in the national income.

Foreign trade and national income : So long we have been discussing the concept of the national income without considering the difficulty created by the fact that a portion of the output produced in the country may be owned by foreigners, while some amount of income payments may be received by the people of the country from foreign countries.

The calculation of the national income must, therefore, take account of the existence of foreign trade and foreign investment. If Britishers receive dividends from industrial concerns operating in India, this is a part of the national income of Britain and not part of Indian national income. Our exports are parts of our national output total, while our imports are parts of the national outputs of countries sending these goods to us. Hence in calculating the national income, we must take account of exports, imports, dividends and interest payments in and out of a country etc. In practice a mere transfer of ownership from a resident to a foreigner is not recorded in the national income unless the commodity is exported, or its value is sent abroad. For example, if a foreigner buys a house in Delhi and pays the price out of any bank deposits he possesses in India, this transaction will not affect the calculation of the national income. In principle, of course, such should not be the case. But unless the goods and services are actually exported or imported,[4] they are not usually included in the calculations of the national income. The authorities have calculated the surplus of all goods and services provided by us to foreigners over what they send to us, and included it in the national income. If the difference is positive, this represents our net foreign investment. If it is negative, this is to be deducted from the national income.

There are many other problems involved in the definition of the national income, and the discussions among the economists have not reached the conclusive stage. However, if a consistent treatment of the different items is followed, estimates of the national income do not differ by a large margin.

Personal income and disposable income : Two other concepts have to be noted in connection with the discussion of the national income. One is the concept of personal income. This is equal to the money payments made to all individuals in the country. It differs from the national

[4] Some services purchased by foreigners, for example by tourists, are assumed to be exported.

income at factor cost in two ways. First, it includes all transfer payments made by the government, *i.e.* payments for which no service is rendered in return. Secondly, it excludes those items of income like undistributed profits of joint-stock companies or the corporate profits taxes, which are not paid out to individuals.

Disposable income means that part of the personal income that remains in the hands of individuals after payment of direct taxes. It is equal to personal income minus direct taxes. It should be noted that personal income excludes indirect taxes as well. Disposable income is the sumtotal of money incomes that remain at the disposal of individuals. It is the most significant total when we want to study the relation of income to consumption expenditure and saving. The major portion of the disposable income is spent by individuals on consumption goods, and a part is saved. So it is equal to the sumtotal of consumption expenditures and saving. In other words,

Disposable income (I) = consumption expenditures (C) + saving (S)

Relation between these concepts : We can now trace the relationship between the five concepts: Gross National Product (GNP), Net National Product (NNP), Net National Product at factor cost, Personal Income and Disposable income, considered as the sumtotal of factor payments.

GNP = rents, + interests, + wages and other earnings, + profits of unincorporated business units, + dividends, + undistributed profits, + corporate taxes, + indirect taxes, + direct taxes, and + depreciation − transfer payments.

NNP at market prices = GNP − depreciation.

NNP at factor cost = GNP − depreciation − indirect taxes.

Personal Income = NNP at factor cost + transfer payments—undistributed profits—corporate taxes = GNP + transfer payments—(depreciation + indirect taxes + corporate taxes + undistributed profits).

Disposable Income = NNP at factor cost + transfer payments—(undistributed profits + corporate taxes +

direct taxes) = GNP + transfer payments—(depreciation + undistributed profits + corporate taxes + indirect taxes + direct taxes).

Utility of national income studies : The study of the size and the distribution of the national income provides the background for economic discussions. The data of the national income are an important index of the total economic activities of a country. They enable us to know how incomes are earned and spent. From a study of these data we can form a correct sense of proportion about the structure of the economy, *viz.*, how much is being spent on consumption and how much is being saved etc. They enable us to find out whether there is adequate balance or lack of balance between the different parts of the economy and whether there is present any major source of disturbance ; for example, whether the aggregate expenditure on capital equipment is tending to outstrip or fall below the level of normal savings appropriate to that level of the national income. The statistics of the national income are specially useful to the government. They enable the government to find out the extent of the inflationary gap, *i.e.*, the proportion of the disposable income that must be saved or taxed if inflation is to be avoided ; or the extent of the deflationary gap, *i.e.*, the amount of extra-public investment that must be made if the downward movement of prices and incomes is to be arrested. The budgets of governments are being increasingly prepared against the background of the national income data, and the government is determining its taxation and borrowing policies so as to neutralise, as far as possible, the broad fluctuations in the national income and its main constituents. In advanced countries where the data on the national income are readily available, the governments have begun to publish annual surveys containing estimates of the volumes of the national income, consumption, saving and investment in the coming year so as to enable the public to study the budget statements against the background of these changes with economy. These statistics are also of great help in framing economic plans for the development of the resources of a country. In the international sphere, the

available data on the national incomes of the various countries are being utilised to divide the burden of some international payments among the different nations. In a federal country like India, the data on the national incomes of the various states may prove useful in enabling the government to determine the amount of grants-in-aid to be provided to the different states.

Social accounting : The statistics of national income provide the basis of what is called, "social accounting". This accounting is presented in various forms such as the statements of total personal income, total personal expenditure on consumption such as food, clothing, housing, furniture etc., and the total volume of savings ; or the statements of the balance of international transactions on current account, or on capital account etc.

One important advantage of these various statements of social accounting is that they enable the statistician to check and verify the calculations made in different sectors. The figures calculated in one set of accounts may be used to check those calculated in connection with other statements, and it may then be possible to narrow the range of possibilities of mistake. Apart from this statistical advantage, the method of social accounting is also of great help in many directions. The various statements of social accounts like the statements of personal income and savings, statements of government accounts, or the statements of international transactions provide a good guide as to the changes that are taking place in the national economy. They are also useful in giving a correct sense of proportion about the structure of production in the country, about the proportion of people engaged in various lines of production, and the amount and direction of capital equipment. They also indicate the role played by the government in the economy of the country by pointing attention to the ratio of taxes to national income, or the percentage that government expenditure bears to the net national product, in any given year.

Estimates of the National Income of the Indian Union: The latest available estimates relate to the

which have been published by the National Income Committee in 1951. The figures are given below:—

TABLE I

NATIONAL INCOME OF INDIA.

Rs. 100 crores.

Agriculture	41·5
Mining, Manufacturing and hand-trades	15·0
Commerce, Transport and Communication	17·0
Professions and Liberal Arts	3·2
Government Services	4·6
Domestic Services	1·5
House Property	4·5
Net Domestic Product at factor cost	87·3
Net earned income from abroad	0·2
Net National Income at factor cost	87·1

As the total population was estimated to be 341 millions in 1948, the per capita national income, therefore, worked out at Rs. 255.

It should be noted that these figures are only approximate as many of the estimates made by the committee had to be based on guess-work on account of the non-availability of statistical date. Moreover, as the committee itself recognised in India, "a considerable portion of output does not come into the market at all, being either consumed by the producers themselves or bartered for other commodities and services. The problem of imputation of value thus arises and takes on significantly large proportions in some sectors of the economy."[5] The task of collecting proper statistics about the various items is further complicated by the general absence of the practice of keeping accounts among both producers and consumers the vast majority of whom are illiterate. Hence a large element of guess-work has inevitably entered into these calculations.

[5] *First Report of the National Income Committee,*

CHAPTER IV

SUPPLY OF LABOUR AND THEORIES OF POPULATION

In this and the next four chapters, we propose to study the question, who produces the gross national product and how? Here we shall examine the attributes of the various factors of production and the characteristics of the organisation of production.

Of all factors of production, the human element is the most important. The volume of production of a country depends upon the total available labour supply. Hence the importance of the population problem. Man is not only a means of production; he is also the end of production. The problem of population is, therefore, of double importance to the economist. He is interested in man as a producer of wealth and as also a consumer of wealth. In this chapter, our endeavour will be to study the laws according to which the number of population is determined and on what does depend its quality. The supply of labour depends not only upon the number of population but also upon its quality. The total number of population in a country depends upon birth and death rates, migration and immigration, of which the first two are the most important.

The Malthusian theory of population : The celebrated Malthusian theory of population was stated by Thomas Malthus in the year 1798, which saw the publication of his anonymous book, "Essay on the principle of population as it affects the future improvement of society."

The population increases in G.P. while the food-supply increases in A.P.

Essentially his theory is that because of the sex instinct population *tends* to increase at a fast rate, and has been known to double itself in about twenty-five years. That it does not always do so is due to a variety of reasons, such as war and disease; but the principal cause is the lack of means of subsistence. Food-supply, according to

him, does not increase as rapidly as population. In Malthus's language, the food-supply tends to increase in arithmetical progression, while population has a tendency to increase in geometrical progression.

Malthus found from a study of the conditions of America that population doubled itself in every twenty-five years. But the food-supply cannot double itself every twenty-five years. Population will, therefore, have a tendency to outstrip the food-supply of a country. This has happened in the past, and this is likely to happen in the future.

Positive checks will come into operation unless preventive checks are adopted.

Hence the growth of population, if otherwise unchecked, would be held back due to the lack of the means of subsistence. The growth of population may, however, be checked in two ways, either by diminishing the birth rate, or by increasing the death rate. The birth rate can be checked by means of "foresight, moral restraint, late marriage", etc. These were called *"preventive checks"*. The increase in the death rate might be due to disease, famine, war, etc. These were called *"positive checks."* If the growth of population is not restrained by the adoption of preventive checks, *i.e.*, by controlling birth rates, it will ultimately be checked by positive checks, *i.e.*, by high death rates, causing much misery. In fact, preventive checks are always in operation. "In proportion as mankind rise above the condition of the beasts, population is restrained by the fear of want, rather than by want itself." Except in a very backward state of society, increase of population is kept within bounds, not by excess of deaths (*i.e.*, positive checks), but by limitation of births, as the result of the practice of self-restraint. And Malthus exhorted his countrymen to adopt preventive checks to an increasing extent, thereby keeping the growth of population within proper limits.

This is the Malthusian theory. It should be noted here that the theory is intimately connected with the law of diminishing returns. With the growth of population, as land is cultivated more intensely, output increases at a diminishing rate. This is the crux of the situation. As population is doubled and so more labour is applied to land, food-supply

will not increase in the same ratio. Hence we are faced with the problem of shortage of food-supply and of starvation.

Criticisms advanced against the Malthusian theory of population : The facts of economic development in the 19th century have completely belied Malthus's gloomy statement. While Malthus was writing his thesis, the industrial revolution had already begun. The 19th century saw an enormous increase in the productive capacities of the world as a result of the spread of that revolution. Population increased rapidly in all countries, but the standard of living also rose considerably. The twentieth century is now witnessing a large increase in agricultural production through the adoption of the methods of scientific farming and the application of machinery. Thus while changes in agriculture and industrial production far exceeded his estimate of the growth of the means of subsistence, the gradual adoption of the methods of birth-control made a great difference to his expectations about the future increase of population. Indeed some of the western countries are now faced with the problem of a declining population.

History has falsified his predictions.

Many criticisms have been advanced against his theory to show that not only his predictions about the future have been falsified, but that his theory is untenable. *First,* the mathematical formula that while food-supply increases in arithmetical progression, population increases in geometrical progression cannot be maintained. In fact, the food-supply increased more than in the arithmetical progression. But it should be remembered that the mathematical formula was only a convenient way of stating his premises. Unfortunately for the human race, the essential validity of the Malthusian principle of population is not destroyed by the substitution of an accurate account of the growth of the food-supply for the fallacious arithmetical ratio.

The mathematical formula is not correct.

Secondly, it is argued that the growth of population should be viewed, not in relation to the increase in the *food supply only, but in relation to the total wealth of the country.* The agricultural production of a rich country may be very

small as compared to the needs of its population. But it can exchange its wealth for the food-stuffs of other countries which possess an excess. England produces an amount of food-stuffs sufficient for a small part of her population. But as she is industrially advanced, she easily exchanges her coal and other manufactured products for food-stuffs from the new and undeveloped countries.

Thirdly, as Cannan pointed out, Malthus failed to take into account the increment of labour that came about with every increase in population. Every person born into the world comes not only with a mouth and a stomach, but also with a pair of hands. An increase in population means an increase in the supply of labour, which may make it possible to secure increasing returns in agriculture and industry. A larger population may mean a better division of labour, and a greater chance for the application of machinery to agriculture. Agricultural production will increase enormously. Moreover, even "if a growth of population did tend to diminish agricultural produce per head, it might still be desirable in consequence of its increasing other produce per head."

An increase in population may lead to increasing returns in agriculture and industry.

For these reasons, Seligman pointed out that *the problem of population was not one of mere size, but of efficient production and equitable distribution.* An increase in population may enable a country to secure a better division of labour, which would not have been possible with a smaller population. The resulting increase in productive efficiency may enable it to support its population on a higher standard of living. Moreover, a more equitable distribution of income and wealth will make it possible to support a larger population than at present.

Malthus has, therefore, been regarded as a false prophet. The spread of the knowledge of birth-control has led to a decline in the birth rate. Similarly, the spread of female education had also led to the same result. This has meant not only late marriage for girls; but the educated girls are showing a great unwillingness to have a big family. A rise in the standard of living also results in a fall of the birth rate. As the standard of comfort increases, people find it

difficult to earn a decent living till a very late period in life. Hence they are forced to marry late. They are also unwilling to have a big family, as that means a fall in their standard of life. "Whether a baby or a car",—this is the problem for the young couple, and often the car wins.

The optimum theory of population : Modern economists are now-a-days more concerned with the relation between the size of the population and the productive efficiency of the country. They no longer speak of a maximum population consistent with the means of subsistence. On the other hand, it is being increasingly accepted that at any given time, there is an optimum population for a country. The *optimum* population is that population which provides the greatest real income of commodities and services per head. Any increase or decrease in the size of the population above or below the optimum number will diminish the real income of the community.

Meaning of optimum.

Assuming a certain stock of natural resources, a given productive technique, and a given amount of capital in a country to be used, there is a definite number of population which will maximise the real income per head. If the population is very small, there will be little opportunity for the specialisation of work among the different workers. In order that there may be fullest division of labour, the population must grow to a considerable size. The larger the population, the wider will be the market for various products. There will be more scope for further division of labour and for large-scale production. This will lower the real costs of production per unit of output.

The central points in the theory of optimum population.

The point of optimum population is reached when the income per capita reaches the maximum. As for every firm, there is a best possible combination of land, labour, capital and organisation, which gives the maximum return and the maximum marginal productivity per labourer, so for every country, given the supply of land, the condition and developments of industry, there is a

The point of optimum is reached when the income per capita is highest.

number of labour supply (*i.e.*, population), which can bring about a maximisation of national wealth, *i.e.*, when the income per head of population is the highest. In our hypothetical firm, any decrease or increase in the number of labourers reduces the maximum marginal productivity. In the case of a country also, other things remaining the same, there is some population, any increase or decrease of which will reduce the per capita income. Thus even a community of millionaires may be over-populated, if a reduction in the number of millionaires increases the per capita income of the rest.

The point of optimum is not a fixed point, but a movable one.

One thing to be noted is that the point of optimum is not a fixed point, because, as assumed above, other things are not equal. We are living in a dynamic society. The mistake of Mill lay in assuming that in any given area, the best number of population was fixed for all time to come. With the improvements in arts of agriculture and industries and with new inventions, the optimum moves from point to point *i.e.*, the number of population that earns the highest income per head changes with improvements and inventions. Thus the optimum is a point, but a movable point.

Dalton's formula to measure over-population.

Dalton deduces the meaning of over-population and under-population from this conception of 'optimum'. In each case, there is a maladjustment of actual number to the optimum. *Maladjustment* is a function of two variables. If M represents the degree of maladjustment, O the optimum, and A the actual number of population, then

$$M = \frac{A - O}{O}$$

When M is equal to a positive number, this is an indication of over-population; and when M is negative there is clearly a case of under-population. As in our present state of knowledge changes in O cannot be measured, this formula is of doubtful utility to us. But the steps by which the definition is arrived at are very instructive. O is determined

for any area by the interplay, under the influence of hypothetically changing numbers, of two factors, *natural resources per head* and facilities *for economic co-operation,* including co-operation with the inhabitants of other areas. As A increases hypothetically from zero to O, the first factor diminishes, but the second increases and outweighs it. As A increases beyond O, the first factor continues to diminish and outweighs any further increase in the second. During outbursts of economic progress, the second factor increases with exceptional rapidity and O tends to increase with it. During a war and in periods following a war when political frontiers are suddenly changed, new tariffs and other obstacles to trade are set up and former trade relations dislocated, facilities for co-operation shrivel, the second factor suddenly diminishes and O tends to diminish with it. O, then, can move either forward or backward. It is, therefore, not necessarily true that the optimum will always be on the increase.

Is increasing population always beneficial to a country?

The value of the optimum theory lies in the fact that it enables us to understand the true implications of the growth of population. According to the Malthusians, growth of population is always undesirable. But the optimum theory enables us to look at the whole thing in its proper perspective. If the actual population is below the optimum, an increase of population will increase the real income per head, and so will be beneficial. It makes available better facilities of economic co-operation, and enables us to avail ourselves of special skill and machinery and of the economies of large-scale production. But as the optimum point is reached, a further increase will mean over-population, and lower income per head. An increase of population is, therefore, neither always good, nor always bad. It must be studied in connection with the optimum.[1]

[1] But the main difficulty regarding this theory is that it is practically impossible to say what the optimum population will be for a country. It is not an easy task to measure changes in the real income per head in a country. Moreover, the productive technique and the amount of capital resources available in a country are constantly changing. So the concept of an optimum population is "of extremely little practical interest."

Net reproduction rate : The growth of population in a country cannot be judged by studying the birth and death rate alone. A mere excess of the birth rate over the death rate does not prove that population is increasing. A more satisfactory measure for the growth of population is the "net reproduction rate." This is determined in this way. Let us first take 100 female babies, and find out how many female babies they will leave behind them as they grow up and pass through the child-bearing age (*i.e.*, 15 to 40). If we find that at the present rates of fertility and mortality, they leave 100 female babies behind them, then we can conclude that the present population will reproduce itself. The net reproduction rate will then be one. But if they leave only 80 babies behind them who pass through the child-bearing age, then the net reproduction rate will be ·8. It means that population will slowly decline, even though there may be an excess of birth over death. If, however, 100 new-born female babies leave behind them 150 daughters, the net reproduction rate will be equal to 1·5, and the population will then grow at the rate of 50 per cent per generation.

Net reproduction rate.

Efficiency of labour : The effective supply of labour and the aggregate production depend not only on the number of workers, but also on the quality of labour, *i.e.*, their efficiency. The more efficient the labourers, the larger will be the total output of the industry of the country. Productivity of labour depends upon many factors, *e.g.*, the division of labour, the advance of large-scale production, a wide use of the capitalistic system of production, the quality of labour, etc. In this section we are concerned with the quality of lobour. The question is, *on what depends the efficiency of labour?*

The efficiency of a labourer has a physical as well as an intellectual aspect. On the physical side, it depends primarily on the *health and strength* of the labourer. On the intellectual side, it depends on the skill and intelligence and willingness to work on his part. The health and strength of a labourer are dependent, to some extent,

Health and strength of the worker.

on *racial factors.* Labourers belonging to one race show, on the average, more bulk and brawn and physical power than those of another race. The *climate* is also a factor influencing the efficiency of a labourer. Temperate climate is suitable for hard work, both manual and intellectual. In a hot climate, a few hours' work tires the muscles. The health and strength of a worker depend in part on the consumption of *nourishing* food in sufficient quantities. Just as the power of steam-engines depends upon the amount of fuel consumed, so also the energy of a labourer depends upon the quantity and quality of the food consumed by him. Most of the labourers in India are underfed. So an increase in the quantity and quality of food-stuffs for these men will materially add to their productive efficiency. Closely allied to food-stuffs and equally important are good *housing conditions, sufficient clothing and other necessaries of life.*

Supply of good food.

Good sanitary houses, having sufficient rooms for maintaining the privacy of family life; sufficient clothing for cold and warm seasons; sufficient leisure to make life worth living; these are necessary for the maintenance of the health and strength of workers.

Better housing etc.

Further, the general working conditions in the mills and other working places inevitably react on the general health and sometimes on the morals of workmen. The productive efficiency of a labourer is greatly increased by good lighting, ventilation and sanitation of factories. Even less noise in the factories and soothing colour on the factory walls may increase the efficiency of workers.

Good lighting, ventilation and sanitation of factories.

The efficiency of workers also depends greatly on the *number of hours worked.* With more hours the muscles feel the strain of the work, the attention of the workers begins to be diverted; and after some time it becomes a positive strain to stick to work any longer. In order to overcome this difficulty, the number of hours worked must be shortened, and there should be intervals during the working day so that workers may relax their strained muscles for a while.

The effectiveness of labour also depends on the intelligence and skill of the workers. Production is now carried on with intricate and delicate machines. The handling of such machines call for a good deal of intelligence among the workers. A skilled and trained worker will produce more than an untrained man. Hence the spread of general and technical education is an important factor as it contributes towards the growth of intelligence and skill among workers.

Intelligence and the skill of the workmen.

There are some kinds of work, especially of the unskilled labourers, where education can hardly contribute to efficiency. Even in many industries and handicrafts, book education is not indispensable for a high degree of skill. In spite of the above observation, it remains true that when general education is widely diffused in the country, the efficiency of the people increases. The rapid spread and use of improvements are greatly promoted by the ease of intellectual communication.

The influence of technical education on efficiency is direct. The training of engineers and the foremen hands down from generation to generation the wisdom of ages. It promotes arts and improvements. Great inventions are in most cases made in the workshops. Widespread vocational training increases the efficiency of labour.

The willingness to work depends on *hopefulness, freedom and change*. A man must be assured that he has a bright future before him if he proves his worth. The slaves had no freedom and nothing to hope for. Hence they had no incentive to work. There must not be too much monotony. Changes of work and association develop fresh creative energy.

Hopefulness, freedom and change.

Lastly, the efficiency of workers is often greatly influenced by the efficiency of employers. An efficient employer will install the best machines, purchase the best raw materials, and will so co-ordinate the actions of the different factors in such a way that each worker gets the right materials at the right moment. As a result, the

efficiency of workers is bound to increase. One reason for the alleged low efficiency of Indian workers may probably be the comparative inefficiency of management which does not always care to utilise the best machinery, or more machines per worker.

CHAPTER V

CAPITAL

What is capital? One of the most controversial topics in economics is that of capital. All economists are agreed that capital is a factor of production, and that it is not an original factor. But as regards the content and meaning of capital, there is no consensus of opinion. The most logical conception is at variance with many of the popular ideas about the subject, while the latter are certainly not logical.

Capital consists of goods destined to be used in production.

It is better to start with popular ideas. If a business-man is asked the question, what is your capital, he will probably refer to the value of his net investment in the business in the form of buildings, machines, raw materials, etc. He will refer to the capitalised value of his undertaking as a going concern, based in part upon his goodwill, and in part upon the value of the buildings, etc. But the economist is not concerned with the valuation aspect of capital. To him, the term includes all physical agents of production, excepting natural resources and labour. Capital, in economics means capital goods:—tangible, material objects which are the result of man's labour in the past, and which are meant to be used in production, and not in immediate consumption. To take an analogy, as in the fairy tales, suppose some fairy has caused everybody to fall asleep instantaneously in a modern community. Everything else is left intact, and into this sleeping city the prince of the fairy tales happens to walk in search of his princess. What will he find on a survey of the products of the place? He will find a small volume of products in various forms which have been devoted to the satisfaction of immediate wants; for example, the food on the dining table or in the kitchens; the clothes and shoes that are on the persons of the sleeping beauties; luxurious apartments in which the princess is perhaps dreaming. These are consumption goods. Next he will find a large volume of goods,

which could not be put to such immediate use, or which would not be so put, but which would be used to satisfy future wants. These, if the prince is an economist, he will recognise as the capital of the country. This category includes the houses and buildings in which work is carried on, or which are necessary to business; the machines and tools which are housed in such buildings; the raw materials which are used in producing things; and the provisions and other goods which have been set aside for the support of the workers while production is going on.

Capital has, therefore, been defined as "produced means of production". Attention should be drawn to the word, "produced". All capital goods are products, the result of human labour in the past. It is thus contrasted with land and labour which are "original" factors. It should be noted here that there are many writers who are inclined to consider land, even labour, as capital. Capital is produced by the expenditure of labour and the use of natural resources. It is, in the words of Wicksell, "a single coherent mass of saved-up labour and saved-up land, which is accumulated in the course of years".[1]

Capital is a means of production as opposed to goods which are consumed immediately. But the distinction between capital goods and consumption goods is one of degree only. It is not made on the basis of any physical difference between the two classes of goods, but on the use to which they are put. The same goods may be capital and non-capital. The house in which I live is not capital. But if the same house is used as a place of work, it becomes capital. Coal which is burnt in the blast furnace of the Tata's is capital; but coal which is burning in our kitchens is not capital.

This is the usually accepted meaning of capital. But some economists, like Fisher, argue for a broader and more logical concept. Capital is correlative of income. It consists of those goods from which we derive an income. But money income is only a proximate fact. Behind money income, lies "real" income, which consists in the utility

[1] *Lectures on Pol. Economy.* Vol. I. Page 150.

which a person derives from the consumption of a commodity. Income is thus a stream of psychic satisfaction. All wealth yields utility, and therefore all wealth is capital. Income is a series, a stream of utility yielded by goods throughout a given period, and capital is the present value of all such utilities, mature or immature regarded as a stock. The definition is certainly logical, but is difficult to follow in actual practice.

Classification of capital : Capital may be regarded from the standpoint of the society and from the standpoint of the individual. On this basis, capital is classified into *social* and *private*. As pointed out in the previous section, from the social point of view all things, other than land, which yield income are to be regarded as capital, including things in public ownership. *Private capital* is capital regarded from the individual point of view. Anything from which the individual expects to derive an income is private capital. A government war loan is capital from the standpoint of the person giving such loan, but is not capital from the social standpoint.

Social capital is divided into (1) consumer's capital and (2) producer's capital. Consumer's capital consists of those finished goods on which consumers live while producing *e.g.*, houses, clothes, food, etc.

Producer's auxiliary or instrumental capital consists of all goods which aid labour in production. Tools, machines, factories, railways, docks, ships, etc., are producer's capital.

Social capital is further divided into *fixed capital* and *circulating capital*. Fixed capital consists of those goods which exist in durable shape and the return to which is spread over a period of considerable duration, *e.g.*, machines. *Circulating capital* serves its ends but once, like cotton, leather, etc. Cotton when manufactured into yarn ceases to be cotton. In this connection, the distinction between old investments and floating capital should be made clear. Money once invested in machines, tools, etc., remains locked up there. After a period the value of the machinery depends upon their productivity. These machineries are known as old investments. The command over goods in the form of

a given money value which can be applied to any purpose, is often described as *free* or *floating capital.*

Production with capital : Production with capital is usually said to be round-about production. Bohm Bawerk gives a nice illustration of this. In the primitive community with no capital, whenever a man felt thirsty he went to the spring nearby and drank water with the help of his hands. He could not store up water, and hence it was most inconvenient as every time he felt thirsty he had to walk to the spring. Instead of satisfying his thirst directly, suppose he devoted a day in producing a wooden bucket, and then used the bucket in bringing water from the spring. He could now store up some water, and was saved the trouble of going to the spring on and often. Suppose, next, he hits upon the plan of laying wooden pipes direct from the spring to his house so that he would have a large and constant supply of water in his house. The construction of pipes certainly took more time than that of the bucket. Thus the employment of more capital makes production more round-about. It should be noted that the round-about method of production is usually more productive.

Functions of capital : The aim of all economic activities is to secure a surplus by increasing the utilities and diminishing the costs of production. The capitalistic system of production affects this surplus in two ways. It increases the stock of commodities and constantly diminishes the cost. Capital aids labour in production. It aids the labourer with tools and machinery, and thus makes labour more productive by increasing the total output and decreasing the cost of production.

Use of capital increases the quantity of product and cheapens it.

Capital not only gives tools to labourers, but also *gives subsistence to them* during the process of production. The capitalistic method is a long drawn-out process. Formerly, the individual artisan used to make a thing from the beginning to the end. A village cobbler would make a pair of shoes by doing everything from the tanning of the hide to the giving of a finishing touch to the shoe and selling it in the village. Unless he had his own small

The capitalistic method of production is a long-drawn-out process.

capital to live on during the process of production, he had to wait until the shoes in the final shape were sold. But the period of production was not a long one. At best it took only a few days, and everyone, whether he was a Hottentot or a Britisher, used to have provisions for a few days. The village cobbler would finish one pair and then begin another. But in the modern factory system, raw material is coming in at the one end and the finished product is going out at the other end. Now shoes are begun and finished almost at the same instant. The function of capital is, therefore, to *synchronize labour and consumption*. The labourer has not to wait for the finished products to be sold. He gets his daily wages. The capitalist advances the labourer his daily wages, though the product in which the labourer has a share reaches the consumer months after.

Capital synchronizes labour and consumption.

Capital helps the process of production by giving the labourers materials of industry of the utmost variety and complexity. They are able to use semi-manufactured materials which they are to fashion into finished commodities. Without a large use of capital this process could not have been adopted.

Capital helps labour with materials of industry.

The capitalistic system of production is a round-about method of production. The interposition of capital lengthens the period of production. Now-a-days a long period intervenes between the beginning of a shoe and its final delivery to the consumer. The division of labour has been brought to its highest efficiency by the employment of capital. Capital is necessary for the purchase of raw materials, for the construction of factory, mill and machinery, for paying wages to labourers, for the stocking of goods for distribution to the retailer. The greater the participation of capital, the more round-about the process of production. On the other hand, a definite part of the process of production is finished very rapidly by the help of machines. *Capital, thus, shortens the period of a particular process but lengthens the period of*

The use of capital makes the system of production a round-about one.

Use of capital means continuity in production.

the entire process; and thus increases the productivity of labour to the utmost. From the standpoint of a society, capital means continuity of production.

Accumulation of capital : Capital grows out of saving. The formation of capital goods is possible in one of the three ways. People who are now busy turning out consumer's goods only may work harder and for a greater number of hours for a few days, thus producing more consumer's goods than before. A portion of these goods may be set aside, and may be used up in the following days when they may devote themselves to turn out some capital-goods. Secondly, the people may decide to devote a part of their working time to produce consumer's goods and devote the rest of the time to make some capital-goods. In this case, they will have to forego the consumption of a part of the usual volume of goods since the aggregate volume of consumer's goods is less than before. Lastly, people may divide the work of producing two kinds of goods among themselves. Some may remain busy turning out consumer's goods, while others are making capital. In this case, those who are producing consumer's goods cannot consume the whole of their output. They will have to support their colleagues who are making machines. These people have to be supported till the average period of production is over, *i.e.,* till the time taken to produce final consumer's goods with the aid of the capital-goods. So they must abstain from consuming the whole of the available consumer's goods. In order that capital may grow, people must abstain from consuming the whole of their income. They must save. But it may be asked: why should people agree to abstain from consumption? The main reason is that such abstention will make possible the production of capital-goods. The use of capital in production increases the productivity of labour. So we can have a larger volume of goods afterwards, if we take a little trouble to save and accumulate capital than if we devote the whole of our time and resources to producing only consumer's goods.

Capital grows out of saving.

Volume of savings depends on the level of money incomes.

The growth of capital, therefore, depends on the volume of saving. The latter, in its turn, depends on the level of money incomes of the people. If the incomes are so low that nothing remains after meeting the bare necessaries of life, the volume of savings must necessarily be small. The higher the incomes, the larger the likelihood of the volume of saving in a country. But even if the level of money incomes is sufficiently high, that does not always ensure that people will save the surplus. That will depend on a variety of motives and circumstances.

Propensity to save.

There are several motives which induce an individual to save. Impelled by the motive of prudence, he may save with a view to building up a reserve fund against unforeseen contingencies or rainy days. Or, he may like to make adequate provisions for the future education of his children, or the marriage of his daughters, or for his old age. Thirdly, he may want to improve his standard of living, and so save for that purpose. Fourthly, he may like to bequeath a fortune to his family, to leave behind sufficient funds for the maintenance of his wife and children. Fifthly, moneyed men enjoy a great honour and prestige in our society, and so he may dream to be counted rich one day and to enjoy power and prestige. Lastly, he may be guided by the spirit of pure miserliness with an unreasonable dread for spending money on anything whatsoever. These motives may be summed up as motives of prudence, foresight, improvement, family affection, pride and avarice.

Motives of saving on the part of public institutions.

In modern communities, a portion of the savings also comes from such institutions as joint-stock companies, etc. The people in charge of these institutions save because of the motive of prudence. They want to make adequate financial provisions, out of their resources, to meet the depreciation of all assets. They also save for the purpose of securing liquid resources to tide over emergencies, difficulties or depressions. Lastly, they also save from the motive of enterprise. They want to accumulate sufficient

resources to enable them to carry out further extensions of plants without incurring any debts.

The strength of these motives will depend on a variety of circumstances. For example, there must be security of life and property. Otherwise, nobody will save anything. For, what is the good of foregoing immediate pleasures if one is not sure that one will be able to enjoy the fruits of his hard-earned savings in the future? The motives of savings will be strong if a country possesses good opportunities for safe and profitable investment of capital. The strength of these motives will also vary according to the customs and habits prevalent in the community, education, religion, etc.

Security of life and property.

Saving and the rate of interest : The influence of the rate of interest on the volume of saving has been the subject of discussion in recent times. Writers like Marshall were of opinion that the rate of interest was one of the factors which governed the volume of saving. The higher *the rate of interest, i.e.,* the larger the reward for saving, the higher will be the propensity to save and vice versa. There will, of course, be people who will save less when the rate of interest is high. People who have decided to save such an amount as to enjoy a certain fixed income afterwards will have to save a smaller sum if the rate of interest is high than if the rate is low. There will also be others who will go on saving, whatever the rate of interest. These are the rich people, or people with an excessive degree of prudence. Moreover, the joint-stock companies which save a considerable amount save from motives which are not influenced in any way by the height of the rate of interest. Hence many writers like Lord Keynes have cast serious doubts on the connection between the rate of interest and the volume of saving. In their opinion, a high rate of interest will depress economic activities, and damp down the volume of investment. As a result, the aggregate money income will shrink, and given the same propensity to save, the volume of savings will be reduced. The aggregate volume of savings is determined by two factors, the level of money incomes, and the propensity to consume out of the money incomes. At a low

level of money incomes, the volume of saving will be comparatively low. But as the level of money incomes rises, given the propensity to consume out of those incomes, the volume of savings is likely to increase.

The fact is that if individuals are rational, they are likely to save more out of their incomes when the rate of interest is high. A high rate of interest means higher rewards on saving, and so on purely rational grounds, people will save more. But saving is the least rational of all things ; it is surrounded by all sorts of social customs and inhibitions. Moreover, savings are often a "buffer," which adjusts changes in expenditure to changes in income. "When the money income of the consumer is rising or when prices are falling, his standard of life will frequently lag behind the rise in the purchasing power of his income ; he will find himself saving."[2] And conversely when prices are rising or incomes are falling. So rational conclusions do not always determine the volume of savings. "Nevertheless, for problems of the "long-run" variety, the conclusions of the theory of rational saving are likely to be more valid."[2]

[2] Boulding, K. *Economic Analysis,* p. 653.

APPENDIX TO CHAPTER V

LAND

In early economic writings, land occupied a very important position as a factor of production. Land was understood to refer not only to the total area or surface and the different kinds of soil, but also to the climatic conditions of a country, the mines and forests, the river and the sea fisheries, water power of all kinds, etc. In short, land meant all natural resources of a country, resources which were given by nature and whose supply was more or less fixed.

This last characteristic of land, *i.e.* (fixed supply) so impressed the classical writers that they placed land in a separate category from all other factors of production. According to them, land was a free gift of nature, and as such involved no cost of production; while all other factors were the result of human labour. Land was regarded as fixed in quantity and not reproducible. There were certain qualities of land which were considered indestructible. The soil, according to Ricardo, possessed certain "original and indestructible powers." On account of these characteristics, land was supposed to be subject to a special law, the law of diminishing returns. But in recent times, these statements have been called in question by a large number of writers. Like land, other goods are also in their original form free gifts of nature. The fact that a certain amount of labour, when applied to a piece of land, produces a given output does not make the transaction in any way different from that when labour is applied to a piece of machinery. The supply of land may be fixed geographically. But then everything in the world is fixed in quantity. Many lands which are now as barren as deserts may be converted into fertile soil by means of suitable irrigation works. As a result, the supply of land from the economic standpoint will increase, just as the installation of a new steel plant will increase the supply of steel. It is not correct to say that land has no

cost of production. In fact, into many acres of land there has been put as much labour as into equally valuable concrete goods. Hence it is no longer possible to maintain the distinction between land and, for example, capital. In the short period there are also many other things whose supply is as inelastic as that of land; while the long-period supply of land may be as much elastic as that of many other capital goods. The law of diminishing returns, which was supposed to be applicable specially to the case of land, has now been found to be valid in the case of other factors as well.

The law of diminishing returns: This law was supposed to be applicable specially to land. Indeed a scottish farmer is said to have the first to state the law. Every experienced farmer knows that he cannot raise an unlimited amount of produce profitably from one acre of land. As he cultivates a particular plot of land more intensively by applying more labour and capital, the produce does not increase in the same ratio. If one puts forth double one's effort in cultivating one acre of land, at first the total output may be doubled or more than doubled. But if the quantity of labour and capital is doubled a second time, the total output will not be doubled; it will be less than double. This is the law of diminishing returns, which has been stated by Marshall in the following terms:—"An increase in the capital and labour applied in the cultivation of land causes in general a less than proportionate increase in the amount of produce raised, unless it happens to coincide with an improvement in the art of agriculture."

Let us illustrate the law. In the next table three bighas of land are cultivated, at first by one labourer, then by two and so on. Each of the labourers is equipped with (say) a plough and other necessary agricultural tools; and the land is adequately manured and irrigated. The third column shows the total product in each case, and the last column shows the additional product due to the employment of the additional labourer.

It is evident from this table that at first if another labourer with proper equipment is added to the one already working, total product may increase by more than in the

first case. But if a third man is added to cultivate the same land the additional product does not increase in the same ratio. This is the point of diminishing returns.

LAND	LABOURER	TOTAL PRODUCT	ADDITIONAL PRODUCT
3 bighas	1 labourer	35 maunds	
3 ,,	2 labourers	75 ,,	40 maunds
3 ,,	3 ,,	112 ,,	37 ,,
3 ,,	4 ,,	142 ,,	30 ,,

The curve in Fig. 1 represents the law of diminishing returns. OX measures the amount of labour and capital applied to a particular piece of land and OY measures the additional product. At first, the land may not be adequately

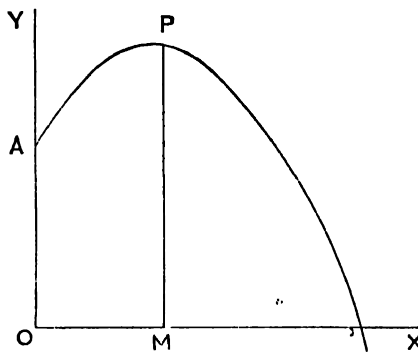


FIG. 1.

cultivated, and as more and more units of labour and capital are applied, the returns may increase more than proportionately. This is represented by the upward slope of the curve from A to P. After the stage P is reached, any further application of labour and capital will cause the returns to increase at a diminishing rate. So the curve slopes downwards from that point.

Here it should be noted that the law refers not to the price, but only to the total volume of the produce. Another thing that must be remembered is that the law does not state that the returns or produce diminish. Total produce increases, but increases at a *continually diminishing rate*. It is a case of diminishing increment. Another fact to be noted is that the diminution in produce is not due to the decline in the fertility of land after continuous cultivation. In stating the law of diminishing returns, we assume that the fertility of the soil remains constant for the time being. The application of more labour and capital to a fixed area of land will yield diminishing returns.

The law refers to produce, not to price.

The tendency towards diminishing returns operates in two ways. First, as it becomes necessary to raise more produce, the farmer may begin to cultivate land of inferior fertility, or less advantageously situated than the former land. Hence the return to his labour will decrease in the second case. This is known as *extensive cultivation*. Secondly, the farmer may apply more labour and capital to the same land which he cultivated before. In this case also the yield will be less than that in the first case. This is known as *intensive cultivation*. Marshall assumed that a farmer applied labour and capital to a plot of land in successive "doses", each consisting of a given amount of labour and capital. As a cultivator applies more and more doses of labour and capital to his land, the additional produce due to each successive dose decreases. A stage will come when the additional returns due to a particular dose of labour and capital will be exactly equal to the cost incurred on account of the labour and capital. This *dose* of labour and capital is known as the *marginal dose*. And the land to which this dose is applied is known as the *marginal land*.

The law is based upon certain assumptions: The first assumption is that the land is already utilised in the best known manner. Adequate amounts of labour and capital have already been applied in the cultivation of the land. It may be that a particular piece of land has been so under-cultivated that a further application of labour and capital yields, not diminishing returns, but increasing returns.

Hence we must assume that the land has been cultivated in the best possible manner. *Secondly,* it is assumed that agricultural skill and knowledge and methods of cultivation remain the same. There is no discovery of new resources, no change in the technique of production, no new invention or scientific discovery. If a new invention, or a change in the technique of agricultural production increases the productivity of existing land, the operation of the law may be entirely counteracted for the time being. For example, after 1919-1920, there occurred an increasing use of machineries in agricultural production and great application of science to agriculture. The result has been an over-production of farm products. Under such circumstances, the law is clearly held in check. But the operation of the law is not completely stopped. The tendency is there, and the moment man stops his unceasing search for scientific progress, it will come into operation.

Limitations of the Law.

The law of diminishing returns as applied to spheres of production other than agriculture : So far we have considered the application of the law to agriculture. The classical writers held that the law was also valid in other spheres of production, *viz.,* mining, urban land, fishery and indeed in all sections of industry.

In *mining,* if there is no improvement in the arts of mining, the tendency to diminishing returns shows itself. Apart from the possibility that the deposits in the mine will be exhausted sooner or later, it becomes necessary in most of the mines to go deeper for an increased supply, with a resulting rise in cost. The cost rises as the cost of lifting deposits increases. As the mines are to be worked deeper the understructure of the surface must be made stronger; better lighting and airing systems must be introduced and thus cost goes on increasing and there is a tendency to lessening yield with increasing depth.

The Law of D.R. in mining.

In *urban land,* the law is also operative. In modern days of steel-frame construction sky-scrappers can be built with twenty, thirty or fifty storeys. Sooner or later, however, a stage is reached

In urban land.

where the gain from building additional storeys tends to diminish. The poorer light and air on the lower floors, the cost of lifting goods and materials, the difficulties of supervision begin to tell, and tell the more and more storeys are added. The tendency to diminishing returns asserts itself.

In fishery. In *fishery, especially in river fishery,* there is a limit to increasing returns from an increasing application of labour and capital. The available supply of fish in a river, like the fertility of land, is limited; hence a point comes after which an increase in the supply of labour and capital gives but a diminishing rate of increase in the catch. In sea fishery, however, the supply being very great, there is hardly any tendency to diminishing returns.

The law of variable proportions : In recent times it is being increasingly recognised that the law of diminishing returns is not applicable only to the case of land. In our statement of the law, we assume that the supply of land is kept fixed, while increasing quantities of other factors are applied to land. In this case total produce increases at a diminishing rate. But this holds good in every sphere of production. Whenever a fixed supply of any factor of production has to be worked with increasing quantities of other co-operating factors, the total output tends to increase at a diminishing rate. Modern writers now speak of *a law of variable proportions.* For technical or other reasons, it may become difficult to increase the supply of a factor of production; or the additional supplies that are available are of inferior quality. If it becomes essential to increase the output, other factors of production will be combined with a fixed supply of that factor, or with larger amounts of the same factors, but of inferior efficiency, the expenses of producing the additional output will tend to increase. It is not necessary to assume that the proper combinations of factors have not been made. Even if the employer is fully efficient, it may not be possible to increase the supply of someone or other agent of production. This is of especial importance in the case of land. The supply of good land is fixed. If it becomes necessary to increase the production

of agricultural goods, recourse must be had to land of inferior quality, or the good lands may have to be cultivated more intensely than before. Hence the total produce will not increase proportionately. The same is true with regard to capital and other factors. Even if an efficient employer may have to combine increasing quantities of other factors along with a fixed amount of capital, the additional output will then be raised at higher cost per unit. The marginal cost of production will tend to increase when a large output is produced. Whenever a fixed supply of a factor or a number of factors is associated with increasing supplies of other agents, the tendency asserts itself. Restated in this way, the law of diminishing returns is of universal application in all spheres of production.

CHAPTER VI

ORGANIZATION OF BUSINESS

The rise of the entrepreneur class is one of the natural corollaries of the modern Industrial Revolution. Before the advent of the Industrial Revolution, production was simple, market was limited and capital employed was also very small. The task of co-ordinating the activities of different factors of production was not a difficult or exacting[1] one. Hence the best type of men was not required to manage such industries. The advent of the Industrial Revolution changed everything. Production is now on a large-scale, machines used are intricate and costly, large amounts of capital are used, the condition of world demand is to be studied and production adjusted to that demand, big risks in production and marketing are to be taken. And the task of combining the factors in suitable proportions has been rendered highly difficult. The importance of persons who undertake this task has increased enormously. These men who control and guide modern industrial system are known as *Entrepreneurs.*

The entrepreneurs are those persons who manage the present complex organization of production.

Functions of the entrepreneur : The modern entrepreneur is a man of first-rate importance. It is his function to decide what to produce, where to produce and how to produce. He plans the whole business from start to finish. He decides the quality and the quantity of the product. He selects and purchases machines and sees to it that no materials are wasted. He co-ordinates the different factors of production in right proportions, and employs each factor in such work for which it is best fitted.

He decides what, where and how to produce.

The classical economists considered that management was a most important function of the entrepreneur. It was his business to manage and superintend the different operations of his business. But with the growth of joint-stock companies, the

He is the controller of the business.

actual work of management is being left more and more to salaried managers. These salaried managers cannot be regarded as entrepreneurs. Hence it is no longer regarded as essential that entrepreneurs should themselves manage their concerns. But the fact which distinguishes the entrepreneur from the salaried manager is that the former is the ultimate controller of the whole business. The entrepreneur is the person or persons who control the business and have the power to determine its policies.

He distributes the money-income to the factors.

Then he has also some distributive functions. The whole income of the business comes to him. He has to pay proper remuneration for land, labour and capital. Even if there be loss, the other factors will not suffer. They must be paid according to the terms of contract.

But his most important function is risk-taking.

Thus the most important function of the entrepreneur is his *risk-taking*. Every factor of production has to face some risk no doubt, but his risk-taking is of a special kind. His risk is an indeterminate and immeasurable one. Modern production is carried on in anticipation of future demand. The modern system of production is a long-drawn-out process. It takes months to bring out finished products to the market. The entrepreneur must study the demand for the commodity, the supply already in the market and then undertake production. If he miscalculates, if there is one weak link in the whole chain of his calculation, production may result in loss instead of profit. The greater the complexity of the modern system of production and marketing, the greater the chance that they may be totally upset by an unforeseen contingency. Fashions may change, or new inventions may make his plans totally worthless from the point of view of profitable employment. He assumes such risks and hence his importance in the modern system of production.

His function is innovation.

It has also been stated by some writers that the entrepreneur performs a special function in production. His main function is *innovation*. He is the pioneer in his own line of business, undertakes new tasks, adopts new processes, and

goes ahead of others in introducing inventions and improvements.

The supply of the entrepreneur class : Great captains of industry are born and not made. They are geniuses, and like all geniuses their supply is based upon factors which are beyond human knowledge. Freedom of opportunity and a wide diffusion of education are the means for the discovery of persons having such unusual gifts.

The supply of first-class brains is scarce.

But average business ability is not very difficult to attain. General and technical education among the workers of the industry will make them more intelligent and if they are given fair field, some of them may turn out to be able businessmen. The son of a man already established in business starts with marked advantages over others. Once the firm is made a going concern, a man having average business ability may keep it running. Sons of many captains of industry, though they themselves are of average business ability, have run their fathers' businesses quite successfully. But in some cases they fail to manage their fathers' business. But their failure does not mean that the business will be ruined. They may become sleeping partners, with fat profits, taking as partners men who have unusual business ability. Thus the ranks of successful businessmen are constantly being filled up by men drawn from the lower rungs of the industrial ladder. Men who have shown unusual business ability in the management of small businesses and have become successful in competing with big business even with their small capital may, in time, become captains of industry. A well-balanced university education and experience can promote business ability.

But the supply of men of average ability is not scarce, and their ranks are constantly filled by men from below.

Forms of business organization : We shall now discuss the different legal forms under which the entrepreneurial functions are organised. These are usually classified as single entrepreneur system, partnership, joint-stock companies, co-operation, and government management.

The single entrepreneur system : In this form, the business is owned and managed by a single individual, who alone is responsible for its success or failure, The peasant proprietor, or the small retail grocer furnishes a good illustration of this system. This form of business possesses many advantages. The proprietor takes a great personal interest in his business, and tries to make it efficient. Secondly, responsible to himself alone, he possesses the freedom and the opportunity for taking prompt action. The necessity of consulting a large number of partners, or shareholders does not hamper his initiative. His business secrets cannot leak out through the indiscretion of partners. Lastly, in businesses which are simple in nature, and which do not require a large amount of capital, he can shine at his best. He can produce things to suit the individual tastes of his customers or can devote himself to the production of artistic goods.

Advantages.

The main disadvantage of this form lies in the fact that a single individual is seldom in a position to invest a large amount of capital in his business. And modern businesses require large investments of capital. And even if he is in a position to do so, the risk will be very great, for he is personally liable to the full extent of his property for all debts of his business. Hence at the present time, this form of business is gradually losing ground to joint-stock enterprises. Only in agriculture, the individual still occupies the predominant position.

Disadvantages.

The partnership : The partnership is an association of a few persons well-known to each other and actively engaged in the undertaking. It is the simplest and the oldest form of association of two or more businessmen. The legal characteristic of a partnership is the joint and several liability of partners for all debts. The creditor of such a firm can secure the full amount of the debt from anyone of the partners. Of course, the partner who has paid the shares of debts of others may obtain his money back by a contribution suit. As

Often it has arisen from the fact that businessmen have taken their ablest employees as partners.

regards the size of partnership, while there are some firms which have attained gigantic proportions, smallness is the rule. Often the business is started by a single entrepreneur and if any of his capable employees wants to break away with him, he offers him a share in the business and thus retains him instead of allowing him to start a business of his own.

Advantages of partnership.

A partnership can secure a larger amount of capital than a single individual. The unlimited liability of several men enables them to raise more capital, as it offers a greater margin of safety to the creditors. Another advantage lies in the combination of men of ability. Each partner can specialize in a particular branch of the business ; one may be entrusted with buying, another with selling and so on. This leads to great efficiency. New blood can be infused into the business by taking in new partners. As several men have to be consulted, the resulting decision is likely to be sound. On the other hand, there is also the possibility of serious delays and disagreements in making decisions. Another disadvantage is the lack of continuity of the partnership. On the death, or lunacy or insolvency of one of the partners, the whole business stands dissolved. Lastly, the unlimited liability of each partner for the debts of the concern deters many rich men from joining a partnership.

Disadvantages.

Difference between a company and a partnership.

The joint-stock company : It is an association of individuals, known as the shareholders, or stock-holders, who join together for the purpose of carrying on a specific business, and agree to supply the capital. A group of individuals draw up the articles of incorporation in which the name of the company, the purpose for which it is formed, the nature and the amount of the capital to be issued, etc., are clearly laid down. These articles are then submitted to an officer of the Government. After he has issued the certificate of incorporation, the company can commence its operations. The company is, thereafter, looked upon as a

legal person, and can sue and be sued in its own name. Unlike partnerships, therefore, its life is independent of the lives of the shareholders; it has not to be dissolved on the death of any shareholder. If all the existing shareholders of a company die simultaneously in an earthquake, the shares would pass on to the heirs, and the company would go on as usual. It is an association of capital, not of persons. Another difference between a partnership and a joint-stock company lies in the fact that while the liability of the partners for the debts is unlimited, that of the persons forming a company is *limited*. Each shareholder is usually liable only to the extent of the value of the shares that he has agreed to subscribe, though in some cases, the liability may be limited to double the value of the shares. All the risk that they run is that if the company becomes bankrupt, they will lose the value of the shares they have purchased. The creditors of the company cannot attach their other properties.

Limited liability.

The capital of a joint-stock company is raised by the issue of *shares* or stocks of small denominations to the public. Any person can take up as many shares as he likes, though in some cases, a limit might be put to the amount which could be bought in one name. The shareholders, or the persons who have bought the shares, are the proprietors of the company. Each of these shareholders has the right to attend a general meeting of the shareholders, the right to give his vote in determining the policy to be pursued by the company, and to elect the directors, and the right to receive dividends, *i.e.*, shares in the profits of the concern. Shares are sometimes divided into two types—*ordinary shares* and *preferential shares.* The difference between these two types of shares lies in the fact that the company agrees to pay a fixed rate of return on the preferred shares, while the rate of dividend on the ordinary shares is uncertain. Moreover, dividends must be paid on the preferential shares before any profit can be distributed to the ordinary shareholders. Of course, if the company earns no profit, the preferred shareholders do not get any dividend. Sometimes *Cumulative Preferential*

Ordinary and preferential shares.

Shares are issued, upon which back dividends must be paid up before any dividends can be declared on ordinary shares. There is another way in which these shareholders get preference over the ordinary shareholders. If the company goes into liquidation, the former must be paid in full out of the realised assets before anything can be distributed among the ordinary shareholders.

A part of its capital may be raised by a company by the issue of *bonds* or *debentures*. A bond or debenture is a certificate of indebtedness issued by a company, bearing interest at a fixed rate and repayable after a fixed number of years. The bond-holder has no voice in the management of the company; he is the creditor of the company, and not its owner. In case of liquidation, the bond-holder must be paid in full before any assets can be distributed among the shareholders, both preferred and ordinary. Bonds are thus safer than shares, but they do not carry the chance of very large returns in case the company is exceptionally successful. The capital of a company is thus divided into different groups to suit the different classes of investors.

Bonds or debentures.

Though the shareholders are the owners of the corporation, they do not manage its affairs. The actual work of management is left to salaried managers, while the shareholders elect from among themselves a *Board of Directors* to supervise the operation of the business. The directors determine the general policy of the company. Thus in this system, ownership and management have been successfully separated. Another point to be noted is that though the management of a joint-stock company appears to be democratic, actually it is highly oligarchic. In practice, the vast majority of shareholders do not take any active interest in the affairs of the corporation, and do not take care to attend the meetings, or to cast their votes at all. A group of persons usually succeed in having a controlling percentage of the total shares, or in getting a sufficient number of shareholders to sign over proxies. These active, dominating persons control the business.

Management of a company.

Advantages : It has facilitated production on a large scale. Formerly, businesses requiring millions of rupees could hardly raise such sums. Now the joint efforts of many result in a large-scale business. Cost of production is reduced and products become cheaper. Thus consumers as a class are benefitted.

It has made production on a large-scale possible.

It has given a stimulus to the saving of capital and its investment. Persons, having small surpluses, do not find that surplus useless, but can invest in shares of small value. Further, by separating risk-taking from investment, it has induced all classes of persons to save capital. Those who are willing to undertake risks buy shares, and those who want to take no risks buy bonds. Among the shareholders, risk-taking is further graded according to the degree of risk, as the shares are divided into ordinary and preferential shares. Ease of transferability and the establishment of stock-exchanges, where shares can be freely bought and sold at any moment, have given further stimulus to saving and have made the system very popular. Shares are sold and bought in the market like any other commodity and the investors can withdraw their money whenever required. The ease of transfer serves to bring the industry under the control of able men to the exclusion of ignorant, incapable and weak men. Those who can judge best of the prospects of an enterprise and can exercise influence towards its skilful management, buy out these who are incapable and afraid to take any risk.

It has increased the supply of capital.

The joint-stock system has promoted risky and venturesome investments. The liability being limited, and the risk undertaken by each individual shareholder being small, the directors can launch into venturesome projects. The progress of invention in modern times and the diversification of industry have been possible only on the assumption of bold risks by companies. The joint-stock system has the advantage of stability. It is not to be wound up with the death of a shareholder as in a partnership. The management is easily flexible, and

It has promoted risky enterprises.

It has made business more stable.

new blood can be infused in the directorate. Having huge capital at its disposal, it can afford to secure the services of the best industrialists as its managers, and a fair degree of success is thus ensured.

The *disadvantages* arise chiefly from the ease of transferability of the shares. Control of the industry may pass not only to the shrewd, but also to the unscrupulous persons.

The control may pass into unscrupulous hands.

Those who are inside the industry as directors and others who know the internal working of the firm, may sell their shares when they scent any danger without disclosing it to other shareholders. Thus the innocent members of the public who buy such shares will have to undergo losses. Or, when the directors learn that a big dividend is going to be declared, they buy up as many shares as they can, only to sell those shares again at a high price. Thus they try to make money by speculation which is condemned by public opinion.

Another disadvantage is that it weakens the sense of association for common end. The sense of association is

There is no *esprit de corps* among the directors and shareholders.

weakened, partly because the shareholders are too numerous to know one another, and partly because the shares change hands too frequently. The team-spirit with which partnership is worked is found wanting in it. Whenever there is any chance of danger to the enterprise, shareholders begin to sell the shares, and the general stampede that follows injuries everybody. Each looks to his own interest and "the original notion of joint venture for common profit or common loss is forgotten."

Another defect which should not go unnoticed is that the *divided responsibility increases the temptation to laxity*

It is not as vigorous as the partnership or one man firm.

inherent in joint-stock management. However able the directors are, they are bound to delegate a certain portion of their work to subordinates, one manager being in charge of a department. There is a want of proper co-ordination between the different departments, though the heads of departments are subordinate to one chief.

Sometimes, the directors like to follow the line of least resistance by consulting their own ease and avoiding the trouble of taking risks. But this evil has been counteracted by another inherent tendency in human nature. "It is to look beyond pecuniary gain, an ambition to prove one's ability." Often the manager is emboldened to take the initiative, as he is generally offered a definite share in the excess incomes.

It may also lack initiative.

Another disadvantage from which the joint-stock management suffers is *the want of elasticity* in the matter of discipline. The managers cannot, like the private owners, make use of their personal experience of men's character and rely upon the honesty of the workers, instead of applying mechanical methods of checks.

Selection of employees may not be efficient.

On the whole, it might be said that the advantages far outweigh the disadvantages. It is doubtful whether modern system of large-scale production would have been possible without the joint-stock organization. The superiority of this form becomes evident when we see that it is gaining ground over other forms of business organization in almost all spheres of production.

Co-operation : Another form of industrial organization is co-operation. It is opposed to the capitalistic system of production, in which the capitalist hires the labourers and remunerates them for their services. The chief evil of modern capitalism is the gradual cleavage between the interest of the capitalists and those of the labourers and the antagonism between the two classes. Bolshevism, Communism, Socialism and various other movements are manifestations of this class struggle. Co-operation is a form of industrial organization in which the capitalist is eliminated. The workers themselves subscribe the capital, manage the industry and divide the profits among themselves. Beginning from the manager down to the unskilled labourer, all are proprietors of the industry, there is no longer any indignity in work, no master and servant relation.

Co-operation is principally of two kinds:—co-operation among producers and co-operation among consumers or productive and distributive co-operation. When production is carried on by an associated group of workmen, who distribute profits among themselves, it is called productive co-operation. It is the verdict of the economists that productive co-operation is a failure, though not an absolute failure. In some spheres, especially in the field of agriculture and small industries, it has been attended with some degree of success, probably because in these fields, industrial leadership is the least wanted. But in industries of moderate size, co-operation has failed to prove its worth, the chief cause being the elimination of the entrepreneur. The managers of the co-operative producers' organizations have been men possessing a low order of ability; the workers, as they are themselves the masters, do not subject themselves to the strict control of the managers and therefore discipline is wanting. "The essential difficulty in the way of co-operation in production is that it attempts to supersede the businessman where he is most needed. Its failure is at once a result and a proof of the variety and importance of business leadership".[1] Further, there is the difficulty of obtaining sufficient capital and securing markets. Still we must not be blind to its advantages. It serves to eliminate class war; tends to create in the workers a sense of self-respect and if properly worked, brings larger returns to the labourers themselves.

Co-operation in production.

The second type of co-operative organization is an association of consumers for the purpose of the wholesale and retail sale of goods. The common principle is to divide profits among the members in proportion to the amount of their purchases from the stores. In contrast with the productive co-operation, it is an unqualified success. The consumers of a locality combine and start a shop of their own with small shares subscribed by themselves. The object is to supply necessary commodities to the shareholders. The shop purchases at wholesale prices and sells the commodities at retail prices.

Co-operation in distribution

[1] Taussig, *Principles of Economics.*

The profits are distributed among the consumers, or the shop may sell at a lower price to its own shareholders. But the effect is the same. The profit of the middlemen is eliminated. Its success is due to the fact that it has a constant body of customers. There are no costs of advertisement and the customer who participates in the profits is not very much exacting as a purchaser. Several co-operative sales stores have branches throughout the world. These stores have often started productive organizations under themselves to supply the necessary articles of sale.

Concerns under public management : Finally we come to another form of business organization in which the government or the local authorities own and manage the whole concern. The Government of India owns and manages the Railways, Post offices, Telephones, etc. In the western countries, many municipalities own and operate their own state railways, waterworks, electric light plants, etc. In case of government-managed concerns, it has become the usual practice to entrust the management of these businesses to a special Board or a Committee of experts, who are to manage them on business principles free from all political or sectional pressure. In India, the internal affairs of the state railways are managed by the Railway Board. But the ultimate control is retained in the hands of the voters in a democracy.

CHAPTER VII

THE ORGANIZATION OF PRODUCTION : DIVISION OF LABOUR

Division of labour : One of the important characteristics of the present economic system is the division of labour. In primitive communities, there was, of course, some sort of division of labour. In the garden of Eden, it is said that Adam delved and Eve span. But the principle has been applied extensively in modern economic societies. Originally, this division of labour was confined to the members of the family. As time went on, people began to look upon the village as an economic unit in place of the family. Different families of the village betook themselves to different occupations in order to make the village a single self-sufficient economic unit. The progress of material civilization, the invention of machinery and the widening of the market through greater transport facilities have led to the widening of the economic area, and thus division of labour has come to be more minute and complex.

The pre-requisites for division of labour are (*a*) the extent of the market and (*b*) continuous production. If the labour of producing a thing is to be properly divided, many men must be employed at different tasks and consequently production will have to be carried on a large scale. Unless the market is wide enough to absorb this large output, it will not be profitable to produce on a large scale. Hence a wide market is a necessity for disposing the products. Division of labour is, therefore, limited by the extent of the market. Secondly, if there is to be a minute division of labour, there must be continuous production. If there is only intermittent work, the worker is obliged to find other occupations in the slack season ; in that case the greatest amount of economic gain from division of labour cannot be secured.

Extent of the market.

Continuous production.

Division of labour may be simple or complex. Under the *simple form*, a workman carries through the whole of one of the stages of production, *e.g.*, the cobbler, the carpenter. Under the *complex form*, one stage of production is split up into several operations. In a shoe factory, a pair of shoes is not made by a single cobbler; it is the handiwork of some eighty workers. Another phase of the division of labour is the *geographical division* of labour. With the rapid development of the transport system through the establishment of railways, opening of canals, and invention of steamships, one particular locality or country began to specialise in the production of a commodity in which it possessed some natural advantage or some advantage of aptitude and skill. Thus Bengal specialises in the cultivation of jute while Berar is devoting itself to cotton.

The geographical division of labour.

Advantages and disadvantages of division of labour: The *advantages* of division of labour have been stated long ago by Adam Smith. The main result is a vast increase in production. Adam Smith wrote that an individual pin-maker could not make more than 20 pins a day when working alone. But 10 men, by proper division of labour, could produce at least 4,800 pins a day. This increase in productivity is due to a variety of reasons. First, if the work is suitably divided, each man can be given that work for which he is best fitted. There will be no waste of energy as a skilled man will not have to do a work which can be done in the same efficient manner by an unskilled worker. Thus it provides scope for the best utilisation of natural aptitudes. Secondly, it increases the dexterity of every individual worker. A man who works continuously at one task for a long time will acquire special skill or dexterity in doing it. Workers will, therefore, become efficient. Moreover, there will be another type of gain from such specialisation. A man may do everything better than another, but his superiority is more marked in some lines than in others. Under proper division of labour, the

It places the proper man in the proper place.

It makes labourers more efficient.

first individual will confine himself to only those lines where his superiority is the greatest. The principle is specially applicable in the theory of "comparative cost," and is an important source of gain that a country derives from its foreign trade. Thirdly, there is a saving in time and tools. As the worker is continuously employed in one kind of work, he has not to waste time in passing from one job to another. There is a saving in time in another way. As the worker needs know only a part of the processes of producing a commodity, the period of his apprenticeship is shortened. There is thus an economy in time and effort. There will also be a saving of tools. Each machine is to be used for a particular purpose. It has not to be re-set to perform some other functions. Fourthly, division of labour has led to the invention of machinery. Smith cited the instance of the boy who made an improvement on steam-engines in order that he might have more time to play. As the processes of production are split up, each particular process becomes easy and simple. Such an operation may then be entrusted to a machine invented for that particular purpose. Thus division of labour results in a vast increase of production, and a substantial lowering of costs.

There is a saving in time and tools.

It leads to invention of machines.

But the *disadvantages* of the division of labour are not negligible. Extreme division of labour as between persons leads to the following disadvantages. There is a loss of skill and of a sense of responsibility. The worker becomes a mere machine tender. He feels no joy in his work, no pride in his product, as it is not solely his handiwork, but a joint product of a host of workers unknown to each other and perhaps separated by thousands of miles. The responsibility for making the product perfect is divided between thousands of men, and hence it becomes nil. Secondly, division of labour tends to monotony. Tending the same machine, repeating the same work day in and day out, deaden the sharpness of intellect, curb the artistic sense and narrow the vision. It stifles and represses all powers of initiative.

There is loss of skill and efficiency.

It leads to monotony.

Thirdly, extreme dependence of workers on one branch of work may lead to unemployment, when for any reason the demand for the commodity falls.

The following harmful effects follow from the extreme territorial division of labour. The dependence of one section of the country upon a particular product may be perilous if there is an enforced cessation of production. If one country be dependent for its food-supply on another country, its food-supply may be stopped if hostility breaks out. Secondly, extreme territorial division of labour results in the localization of industries. In the localized industry there may be demand for only one class of labourers. In iron districts only strong men are employed. There is no work for women and children. Hence the average income of one working class family may be very low, though the male workers of the family may earn comparatively high wages. The remedy for this evil lies in the fostering of supplementary industries in the neighbourhood to give employment to women and children.

It may lead to unemployment.

It may lead to enforced cesssation of production.

It leads to localization of industries.

The use of machinery : its advantages and disadvantages : We have seen that modern complex division of labour is closely connected with the invention of machinery and the industrial revolution. We propose now to deal with the economics of substituting machinery for labour and the attendant evils of substitution. *The economies of using machinery are the following*: Some kind of work could not have been performed by human strength without the use of machinery and Nature's powers. These things can be done easily by machines. No human being could ever think of moving things which are now moved by a crane. In most cases, machinery can work faster and is more productive than human beings. Machinery works more accurately than man. A machine exactly repeats its operations. The component parts of a machine are all standardized products. The parts can be replaced. If a part goes wrong, it can be easily

Economies of the use of machinery.

replaced by a new one which exactly fits in with other parts of the machine. This system of interchangeable parts has increased the use of machinery and has increased productivity. Machinery reduces cost of production. Things have become cheaper and many commodities which were formerly within the reach of rich men can be enjoyed now-a-days by a family of workmen.

Effects of machinery on labour.

Effects of machinery on labour : Machinery relieves the strain on human muscles. Heavy and laborious tasks are performed by machinery. The work of drudgery and all works which require constant repetition of the same process are now performed by machines. A printing machine, now-a-days, even folds the newspapers; this folding involves a drudgery and monotony of the extreme type. Secondly, handling of machinery requires some intelligence and sense of responsibility among the workers. Modern workers, thus, being in charge of machineries, become more intelligent and responsible. Machinery improves the quality of labour. Thirdly, machinery diminishes the barriers between different trades and makes labour more mobile. Machines for the production of a commodity can easily be adopted, with minor differences, to produce another commodity. So it is possible for a worker to move from one industry to another if he so desires. As for instance, the workers who have learnt to handle machines for making watches can move to the industry of making guns, where the machineries used are almost similar. Lastly, machinery increases the efficiency of labour and raises its wages. The more capitalistic the system of production, the greater the use of machinery, the lower will be the cost of production, profits will be higher and with them the wages.

Disadvantages of machinery : But the introduction of machinery throws men out of employment. Sudden introduction of machinery is thus opposed to the interests of labour. The trade which used to give bread to thousands of workers can be managed by a comparatively few men and the workless labourers go to the wall. England witnessed

that during the period of Industrial Revolution (1760—1820). India is experiencing that now.

The most injurious effect is on the relation between the capitalists and workers. The workers who were previously engaged in the village handicrafts now feel the pinch of sudden unemployment, and are pushed to the industrial centres in search of employment. They may get employment in the factories, but lose their former freedom. There is no personal touch between the highly paid manager and the workers. They become parts of a machine. The congenial home atmosphere which prevailed under the domestic system of production is gone. Capitalists and labourers come to think that their interests are antagonistic to each other. And thus the seeds of class-war are sown. Another injurious effect of machinery is on the health and morals of the workers. They had to work long hours amidst unhealthy surroundings and had to live in unhealthy bustees. The labour of children and women was used without any regard to their health. The promiscuous mixing of males and females and the shameful condition of housing accommodation lead to moral degeneration. All such evil effects are not necessarily the result of the introduction of machinery, nor are they permanent in character. They are the results of maladjustment at the initial stage of industrialisation and of the greediness of the capitalists. If the factory laws are rigidly enforced, and if the people take more interest in the welfare of the workers, the evils will be remedied to a great extent. In spite of its defects, machinery has done a great service to humanity. Human life has become more enjoyable and richer for it.

But in spite of the defects the introduction of machineries has been vastly beneficial.

Machinery and unemployment : Machines are usually, but not always, labour-saving devices. When they are introduced, there is generally a displacement of labour for the time being. The same work that was formerly performed by 100 men is now done by (say) 5 men. In the short run, the introduction of machineries has usually led to unemployment among workers. Labour and capital appear to be competitive, one displacing the other.

On this ground, therefore, the introduction of machines has generally been opposed by the labourers. The period in which England was passing through the industrial revolution saw extensive riots in which workers smashed the new machines that had robbed them of their work and bread. But the situation is not as distressing as the labour leaders make out. In the heat and dust of controversy, it is forgotten that capital and labour both co-operate in the production of the national income. Capital without labour is dead, and labour without capital is inefficient. If both co-operate, the income of each mounts up. In fact, in the long run, the introduction of machines, instead of creating unemployment, adds to the aggregate employment in the country. Suppose that in the cotton textile industry, a labour-saving machine is introduced. For the time being, some labourers will be unemployed. But they will soon be absorbed in the following way. As a result of the introduction of machines, cotton goods will be cheaper. If the demand for such goods is elastic, consumers will buy more of such goods. The result will be expansion of the industry, and re-employment of some workers in the expanded industry. If, however, the demand is inelastic, and the consumers do not increase their purchases, their expenditure on cotton goods will be less as the goods will be cheaper than before. They will have, therefore, more money to spend on other commodities. Production will expand in other industries where unemployed labourers will be employed. Some workers will also be absorbed in the industry for making the machines. Lastly, as a result of the introduction of machines, those workers who are employed will earn higher wages than before, because machines increase the productive efficiency of labour. They will spend more money in buying commodities, and additional workers will be engaged in meeting their wants. In these various ways, the displaced labourers will be slowly absorbed in the industry as a whole. Moreover, it should not be forgotten that machines cheapen the products, and so far as the workers themselves consume these cheap products, they gain as a class. In fact, the goods which are usually consumed

Technical invention and unemployment.

by the working class lead themselves easily to inventions and improvements. Hence it has been truly said that though in the short run labour and capital are competitive, in the long run they are complementary.

All this, of course, happens in the long run. During the period in which adjustments slowly work out, many workers may be ruined. Others may, after a hard search, find work in a trade for which they were not trained, and hence they will get lower wages than before. The duration of unemployment depends on the power of the leaders of industry to respond to new situations, and on people's capacity to adjust themselves to new trades.

LARGE-SCALE PRODUCTION

Both the division of labour and the application of machinery are intimately related to large-scale production. Unless production is carried on on a large scale, the division of labour and the use of machines on a large-scale are not possible. When production is carried on on a large-scale the producer secures certain advantages, or economies, known as the economies of scale. Following Marshall, we may classify those economies into two groups, external and internal.

External economies are those which become available to all firms in an industry because of the growth of the industry as a whole, or because of the growth of subsidiary industries. A typical example is the decrease in the cost of machineries as the number of firms using these machines increase in an industry. The more cotton mills there are in a country, the larger will be the scale on which textile machines will be manufactured with resulting fall in their costs of production. All cotton mills will benefit as a consequence. The advantages of localisation fall in this class. In a large industry it becomes profitable to issue trade journals and technical publications which benefit all firms in the industry. As an industry grows in size, certain processes may be split up, and can be performed by specialist firms with mutual benefit to all parties. The more cotton mills there are in a locality, the more profitable it is to set

up repair workshops in that area. The mills secure expert advice and help in the matter of repair of machinery, while the repairing firm gains from having a large number of customers. When a large number of firms concentrate in one area, they secure the advantages through the availability and training of skilled labour, provision of better transport facilities, etc. It should be noted that what are external economies of one industry may be internal economies of another. For example, the lower cost of machines available to the cotton textile industry is due to the internal economies of the machine-manufacturing firm.

Internal economies are those that arise within the firm itself as a result of the increase in its size. They are independent of the general growth of the industry and are the result of the efficiency of management in any particular firm. These economies may be grouped under five heads, technical, managerial, marketing, financial and the distribution of risks.

The technical economies are of many kinds. A large establishment can use many expensive machines, each made specially for one particular purpose. It can afford to buy the best and up-to-date machinery, and make use of large machines worked by steam or electricity. It can thus secure all the economies regarding the use of machines. Small establishments can also use small machines, but there is on many occasions a purely mechanical advantage in using large machines. A large furnace or a large boiler is more economical than a small one. Moreover, unit by unit, the cost of operating large machines is cheaper than that of small ones. The same number of operators may be required to operate a small or a large machine, and as the large machine yields a large output, the cost of operating it becomes less per unit of output. There is also an economy of materials. A large establishment can prevent waste by utilising some or all of its by-products. A large sugar factory, producing large quantities of molasses, can set up a plant for the manufacture of power alcohol from molasses. It will not be profitable for a small factory, producing only a small quantity of molasses, to do so. The utilisation of by-products will enable the firm to sell the main product

to a lower price. Lastly, division of labour can be carried on further in a large establishment than in a small one. Each person can then be employed on a narrow range of work, which suits his special ability. There is, therefore, a great economy of skill.

In a small business, the owner has to do a variety of jobs like planning his output, buying the raw materials, selling the product, engaging and managing the workers, etc. He may be equally efficient in all these types of work. But this is unlikely. As his business grows in size, he may himself specialise, leaving many minor work to subordinates. He will then be free to concentrate on the more difficult work of organization. In a large business, the work of management can be split up into a number of departments and be put in charge of specialists. In this way a good deal of managerial economies may be secured when production is on a large-scale.

A large firm can also secure large marketing economies. As it has to purchase raw materials on a large-scale, it may be able to buy at favourable rates. A large buyer is able to secure better rates than a small one. Its selling costs are also small. It can advertise effectively, though the cost of advertisement per unit is small. It can afford to engage the services of expert buyers or expert sellers. A large tea firm can employ an experienced tea-blender, skilled in the selection and blending of tea.

A large firm also enjoys a number of financial economies. Because of its size, it is likely to be more widely known than a small firm, and so is in a position to secure loans from banks on better terms. It can issue shares and debentures and sell them among the public more easily than a comparatively unknown small firm.

A large firm is in a better position to spread his risk than a small one. He can afford to develop different markets, including markets in foreign countries. If the demand in any one market slackens, it may increase in other markets. So this will enable it to reduce the risks of fluctuations in the demand for his product. Similarly, a large bank with nation-wide branches may be able to spread its risks by investing its funds in different industries and

in different localities. It will not find all its loans frozen if there is depression in any particular industry or region. A large firm may also arrange to produce a variety of goods so that it may be able to balance the effects of a possible slump in one product against those of a boom in another.

Limits to the expansion of a business : The question, then, arises: in view of the substantial gains from large-scale production, why do we not find firms continually expanding to gigantic sizes? In actual life many small firms existing in an industry. How do we explain this paradox? It must be due to the fact that there are limits to the gains from large-scale production. The fact is that in general the larger a firm grows, the gain to be secured from further growth becomes usually less and less, and on the other hand, the greater become the difficulties consequent upon that growth. *First,* the economies of division of labour and large machinery will not continue indefinitely. After a certain stage is reached, further growth will not secure greater technical economies. "A large furnace is more economical than a small furnace, but a point comes beyond which further growth is uneconomical." *Secondly,* the limited capacities of men offer a serious obstacle to the growth in the size of firms. Difficulties of management and supervision increase with every extension in the scale of business. Every time that a further division of labour is made, every time a new branch or a new department is opened, the task of co-ordinating the separated departments becomes more and more difficult. "The big firm is a series of wheels within wheels, an elaborate hierarchy, in which every decision requires the consulting of this man, the referring to that man, the permission of a third, the agreement of a fourth, so that decisions become endlessly delayed." There must come a stage when the machines become too unwieldly to manage, when the increasing difficulties of co-ordinating and supervising the work of thousands of individuals and branches will swallow up all the economies of large-scale production. *Thirdly,* in order to produce on a large-scale, a firm would have to raise large sums of money. It may not be always possible to secure money for expansion at the right moment.

Difficulties of co-ordination.

The businessman who wants to increase the size of his business may not be able to finance it from his own resources. He may borrow from banks or other institutions ; but it would mean that he would be burdened with fixed interest charges on loans and after a certain point he may feel reluctant to saddle himself with too large fixed interest charges. Moreover, the lender will insist that the borrower must provide adequate securities out of his assets and so the borrower's capacity to borrow will be limited by the amount of assets possessed by him. He may also turn his concern into a joint-stock company and raise money from the public. But then he would have to surrender his independence, and work in accordance with the wishes of the shareholders. This may have a cramping influence on his initiative and enterprise, as a result of which efficiency of the concern may suffer.[1] *Fourthly,* the demand for the product may be subject to considerable fluctuations. Here the large firm may be at a disadvantage. The organization of such a firm is more elaborate, and its equipment is highly specialised. Hence it will find it difficult to adapt itself to new and changed conditions of demand. Thus this fact sets a limit to the expansion of a business. *Lastly,* though a firm may secure some economies of production by expanding, it may not always be profitable to do so, for, there are certain "costs of growth"[2] which may impede expansion. The firm must spend money for marketing its enlarged output. The expenditure upon sales organization and upon marketing may increase so rapidly as the firm attempts to grow, that further growth may become unprofitable. The existence of imperfect markets and the inertia of buyers set a limit to the growth of a business.

Financial obstacles.

Costs of growth.

Economies of small-scale production : There are also certain advantages peculiar to small businesses, which account to some extent for their survival. The individual energy of the owners of small businesses is a great asset. There are men who

Advantages of the small producer.

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[1] T. Scitovsky. *Welfare and Competition,* pp. 193 200.
[2] E. A. G. Robinson. *The Structure of Competitive Industry,* p. 120.

will work more efficiently for their own than for others. They can supervise every section of the work. The workers are constantly under their eye, and hence there is no shirking of duty. The personality and drive of the small employer galvanise the employees also, and they often give their best to the beloved master. He can give greater attention to details than the large producer. Another important advantage is that there is scarcely any serious problem of co-ordinating the separated departments, often pulling against each other. The small firm has to consult fewer people; decisions can be reached easily and quickly. Where an industry requires frequent and immediate decisions, the small firms thrive. That is why small firms are predominant in those industries where changes in fashion are constant, and where the conditions of production are changing. Standardisation is not possible in these industries. The small producer has also an advantage in the production of artistic goods. He can devote much labour on each piece of work. His products have a superior finish. In all these industries, the small producer has uptill now held his own against the inroads of the large manufacturer.

Localization of industries : its causes and effects : The localization of industries means the concentration of particular industries in the different parts of a country. When the different firms manufacturing or selling the same product are concentrated in particular areas, that industry is said to be localized in those places. For example, the jute industry is located near Calcutta in India and at Dundee in Scotland; the cotton textile industry in India is more or less localized in Bombay and Ahmedabad.

Causes of localization.

What are the factors which influence the location of different industries in different places in a country? A manufacturer will try to establish his business in the most suitable place where the expenses of production are likely to be the lowest. He would, therefore, pay attention to the several factors which make, first, for lower costs of manufacture at some places than at others, and secondly, for the minimum transport costs. These factors may be classified as *natural, economic* and *political.*

Of course, the most fundamental are the *natural* or *physical causes*: such as the character of the climate and soil or the existence of mines and quarries in the neighbourhood or within easy access by land and water. Metallic industries have generally sprung up either near mines or in places where fuel is cheap. *If the raw materials and fuel supply* are available in the same locality, localization is easily promoted. As for instance, iron and steel industries have grown up in Chota Nagpur and Bihar because iron-mines and coal-mines are situated near each other. *Physical and climatic conditions* determine the distribution of raw materials and the environment suited to a particular industry. They also determine the existence of ports, rivers and seas, on which depends the possibility of easy transport of commodities produced, and of raw materials required for the industry. The extent of localization depends necessarily upon the extent of the market; and ports and navigable rivers broaden the area of the market. In England most of the important industries are localized near the ports from which commodities are distributed throughout the world. *Nearness to the sources of power* is another physical cause leading to localization of industries. In former times, factories were generally set up on the banks of swift-flowing rivers; now-a-days they flock where the hydro-electric works or coal-mines are situated.

(a) Physical causes.

(1) Nearness to raw materials.

(2) Physical and climatic conditions.

(3) Nearness to power.

Of the *economic causes, accessibility* to the market is the most important. This economic cause is, of course, closely related to the physical situation of ports and rivers. But not all industries are located near the ports or navigable rivers and seas. Industries are attracted to the neighbourhood of big towns where they can find an easy market for their wares. Many industries often grow up near big railway junctions for the same reason of accessibility to a big market. Another economic cause contributing towards localization is the *availability of an adequate supply*

(b) Economic causes.

(1) Accessibility to the market.

of labour. Industries may spring up where there is an adequate supply of cheap labour. The growth of many industries in Calcutta may be explained by the availability of a large number of labourers in Calcutta and suburbs. On account of many social, religious and political causes, many skilled labourers of one type may have settled in one part of the country. Many industries have sprung up in that part to take advantage of that labour supply.

(2) Availability of an adequate supply of labour.

Of *political causes, patronage of the court* has the greatest influence in localizing industries. Muslin industry in Dacca and the silk industry in Murshidabad sprang up due to the patronage of the Hindu and Muhammedan rulers of these places.

(*c*) Political cause—the patronage of the court.

An industry may be localized simply because a few firms have already been established at that particular place. The first start often helps greatly the localization of an industry. Many firms may congregate in one neighbourhood, because the locality possesses a reputation for producing some highly finished goods. These firms congregate there to take advantage of the same reputation which is enjoyed by other firms. As for instance, the cutleries of Sheffield or the watches of Switzerland are reputed throughout the world. Hence it is quite natural that new firms will be started in these places to take advantage of the trade-mark, 'Sheffield make' or 'Swiss make'.

(*d*) Momentum of the start.

When once established in a locality, the industry remains there for a long time in order to reap the advantages of such localization. *First,* the products of the industry gain some reputation. Products bearing the name of that place find good markets and reasonable price-offers as in the case of cutleries of Sheffield or the watches of Switzerland, etc. *Secondly,* labourers of that industry acquire some hereditary skill. The mysteries of the trade are in the air, as it were, and children learn many of them unconsciously. *Thirdly,* localization creates a local market for skill. All men skilled in that trade flock to that locality, because they know that

Advantages of localization.

there is a constant demand for them in these firms. Hence there is a regular supply of skilled labourers and new firms are established in that locality in order to get the services of the skilled labour supply. *Fourthly,* subsidiary industries grow up in the locality. They supply the localized industry with implements and materials, organize its traffic, utilize its by-products and in many ways conduce to the economy of materials. *Fifthly,* localization promotes the use of specialized machinery which helps the performance of a particular operation and offers great opportunities for inventions and improvements through a healthy rivalry among the competing firms. *Sixthly,* a localized industry gets the advantages of plentiful supply of capital and finance. Localization of an industry often attracts banks and financing corporations which find in the locality a profitable field for investment.

Disadvantages of localization.

But that does not mean that it has no disadvantages. The *first disadvantage* is that one type of labour being required to work (as for instance, in the iron industries there being demand for only adult male workers), other members of the worker's families, especially women and children, get no employment. Though the wages of the male workers may be high, they are not so high as to maintain their families without any additional sources of income. The employers are also faced with the difficulty of giving high wages to the male workers, because high wages increase their cost of production. But this difficulty is not an insurmountable one. The remedy lies in the growth of subsidiary industries, where women and children may find employment. *Secondly,* localization may cause one part of the country to be dependent for necessary goods on other parts or even one country on another. In the event of a depression taking place in the localized industry, men will be thrown out of employment; and if the products of a particular localized industry cease to be produced for any reason, workers in that industry will suffer. The remedy lies in the establishment of a variety of industries. But this remedy by itself does not provide a complete solution of the problem of depression in any one industry.

Rationalization : Throughout the inter-war period, a conscious process of the re-organization of industry has been going on in order to adjust the industrial organization to the changing facts of the present world. This process is known as rationalization. Briefly, it means "putting reason into industry," and is understood to refer, in the words of the World Economic Conference of 1927, to "the method of technique and of organization designed to secure the minimum of waste, either of efforts or of material." It includes standardization of materials and products, simplification of varieties, waste reduction, scientific management, the use of elaborate machinery in the place of hand labour, as well as the combination of the different firms in the industry with a view to ensuing plant specialization, the closing down of uneconomic firms, reducation of the overhead costs and economy in selling. Rationalization, in short, is a scientific scheme of cost-reduction. "It represents the idea of enlightened leadership embracing an entire industry in relation to other industries, and to the national economy."[3] It is a single organization of brain, brawn, and bullion.

Meaning of rationalization.

There are different methods of rationalization. There may be, for example, only a *financial rationalization, i.e.,* a reduction of over-capitalization of an industry. Or, there may be an *integration of enterprise,* both of the vertical and the horizontal type. Or it may mean the *standardization of types,* and the substitution of hand labour by machines. Rationalization is something more than what is called "scientific management" in the U.S.A. Scientific management connotes the best organization of one firm considered as one unit. It is also a scheme of waste reduction. But scientific management looks more to the *technical* organization of the industry, whereas in rationalization we lay more stress on the *economic* side of the business, the conscious planning of the whole organization in relation to the industrial economy of the nation. Moreover, scientific management may not usually lead to combination, whereas

Rationalization and scientific management.

[3] *Rationalization of the German Industry.* Page 7.

some form of trustification is the usual feature of any scheme of rationalization. As MacGregor points out, "policy means leadership; leadership means control; to control anything well, it is necessary to control a large part of it."[4]

Advantages of rationalization.

Rationalization secures the maximum efficiency of the whole economic organization with the minimum of effort. Cost of production will be lowered, prices will be reduced, and the output will expand. Useless waste of raw materials and of power will be avoided. To the consumers, it will mean lower prices; to the producers, expanding markets, brisk business, and higher profits. The large industrial units will be in a position to raise capital at lower rates of interest than the small concerns. The huge financial resources will make it possible for each industry to spend more on research and on modern plants and to employ better brains. To the community, the greater financial security of the combine, and its larger volume of trade will mean less risk of failure, and comparative stability of production. Lastly, reduction in the selling price of most of the necessaries of life will bring about a higher standard of living for the working classes.

Difficulties of rationalization.

The advocates of rationalization have to face several problems, or "obstacles" as Prof. Clay would call them. First of all, comes the price-policy of the rationalized industry. Despite the claim that rationalization means lower prices, there is always the danger that the price may be regarded as an instrument of exacting monopoly profit by the entrepreneurs. Under the competitive conditions, it is the joint influence of supply and demand that settles the price in the market, and individual firms generally accommodate themselves and their output to this price. But such would not be the case under rationalization. Prices, then, we are told, would be "a compromise between the interests of the consumers, those of the shareholders, the provision of reserves and contingencies".[5] But the leaders may pursue

(1) Monopoly prices may be charged.

an anti-social policy, and raise prices. No remedy but public administration then remains to solve the tangle.

(2) How to find suitable leaders?

Next comes the problem of leadership. Leaders of this generation may prove themselves equal to the task. But what about the next generation? Are rationalized industries going to find suitable leaders to make them successful? The social situation created by the emergence of giant organizations and trusts is leaving no chance for young people to start a career of sturdy independence in the business world. The best talents are forced to find themselves as so many hands or screws in huge organizations. The supply of captains of industry is going to be a serious problem of the rationalized industries.

(3) Rationalization and unemployment.

Another serious charge against rationalization is that it will increase unemployment. The main motive of rationalization is to get more output per worker. The associated changes in connection with rationalization result in an economy in the use of labour. It is urged that in the U.S.A. between 1899 to 1913—a period of rapid technical advance—productivity per worker in manufacturing industries increased only by 16·3 per cent; whereas in 6 years from 1921 to 1927, it rose by 40 per cent. Hence it is concluded that technical progress in connection with rationalization has increased unemployment.[6]

Under certain circumstances, it *may* lead to unemployment.

But all types of rationalization do not involve unemployment. For example, mere financial rationalization will not lead to unemployment. But the integration of industries and the standardization of products may result in unemployment. So also if rationalization is carried out during a period of falling prices, unemployment may ensure because during periods of falling prices, the level of wages does not fall as much as it should. And businessmen, in their search for economy, will try to throw some labour out of employment. But this does not lead to the conclusion that rationalization *will always* result in unemployment.

[6] See before p. 83.

Inventions and improvements do not destroy total purchasing power in the community; they merely change the direction of the purchasing power. A decrease in the demand for certain groups of commodities will be followed by an increase in demand for all others. Moreover, rationalization results in a fall in the prices of commodities, and the consumers can now obtain the same amount of commodities by spending less. Hence they will have *extra* sums of money to dispose of. If they simply hoard these additional sums, instead of spending or investing in business, unemployment will ensue.[7] But it must be pointed out that rationalization, by increasing the profits of industries, opens up fields for fresh investment, and so there is every likelihood of the consumers investing their surplus money in profitable business. If this happens, there need not be any unemployment. Moreover, in the long run, as a result of lower prices, and higher standard of living, the volume of unemployment will diminish. But the period may be a very long one, while there will be temporary unemployment. And in the transition period, the immobility of labour may involve not only considerable losses to individuals, but also considerable delay. Excepting these temporary maladjustments, rationalization or technological progress does not result in increased unemployment. "The process of rationalization observed in Germany during four years (was accompanied during the first 18 months by a considerable reduction in unemployment, during the next 18 months, by severe unemployment, and during the last year by another considerable reduction in unemployment. In these conditions it seems difficult to assert that there is any general correlation between the two phenomena."[8]

In the long run, there will be no unemployment.

CHAPTER VIII

MONOPOLY AND COMBINATIONS

This is the age of giant business. Large-scale production is spreading and firms are growing in size, both through internal expansion and through combination with other firms. As the size of firms is increasing, one or a few of them often succeed in securing control over the market for their products in such a way that they have virtually monopolistic sway over the sale of the commodity. It is necessary, therefore, to examine the various aspects of monopolistic organizations.

Monopoly means the sole power to deal in any commodity. But such an absolute control over the supply of a commodity is extremely rare. In the first place, there are always some substitutes for the product, close or distant. Hence all sellers have to face some sort of competition in the market. The Calcutta Electric Supply Corporation has been granted a monopoly in the supply of electricity in the city of Calcutta. To this extent it may seem that the company has full control over the sale of electricity in Calcutta, and may thus be said to satisfy our definition of monopoly. But electricity has substitutes in gas and kerosene for lighting purposes, and in coal for cooking and industrial purposes. Hence the Company has to face some competition and cannot, therefore, be said to exercise absolute control in the market. Most monopolies are of this type. They have got some control over the sources of supply or production of a commodity in such a way as to influence its price within certain limits. Some of them may possess a greater degree of monopolistic power than others. The De Beers Company of South Africa virtually controls all the diamond mines and may, therefore, be said to conform to the standard of absolute monopoly.

Under perfect competition, there are a large number of sellers in any industry, each of whom sells a very small part of the total output. Entry into that industry is perfectly

free and comparatively easy. If the rate of profit to be earned in that industry rises above the average rate to be earned in similar other industries, more producers will flock to that industry. So no producer can exercise substantial control over the supply of a commodity and can push up its price by restricting his output. But the monopolist can influence the price by curtailing his output. He can go on doing this successfully provided that entry into the industry is rendered difficult for other businessmen. So we must enquire into the causes which tend to restrict entry into an industry. There are four such causes. First, entry into an industry may be restricted by law so that none but the favoured producers are allowed to operate in that line. These are known as *legal monopolies*. Patents for inventions and copy-rights for books are the best examples of such monopolies. The state grants to the inventors the sole right to utilize their inventions mainly with a view to encourage such inventions. The state also reserves for itself the sole power to deal in a certain commodity or service. For example, the government has the monopoly of the postal services. The state also grants monopoly rights in certain industries that involve the right of eminent domain. These are known as *public utility monopolies*. If two gas companies or electric companies are allowed to serve the same locality, there will be useless duplication of gas or electric lines in the same street. If the right of installing telephones is granted to two companies, the clientele of one company will not have the advantage of having telephone connections with the clientele of the other company. Hence the state grants monopoly in such industries to one concern only for overwhelming reasons of public convenience.

Foundations of monopoly power.

Legal restriction on new competitors.

Secondly, the monopolist may have acquired control over the sources of important raw materials. Such is usually the case with De Beers Company in the diamond market. Thirdly, entry into an industry may be difficult because a firm must invest on a large scale if it is to

Control over sources of raw materials.

produce and sell on the most profitable basis. Production on a small scale is not so efficient in these industries. A capitalist may hesitate to invest such a large amount of capital in a highly specialized form in view of the fact that the older firms with huge financial resources may pursue a rate-cutting policy. Such is usually the case with the iron and steel industry, or say, with the Coats monopoly in the sewing-cotton trade. For this reason, the existing firms in that industry enjoy some monopolistic power, unrestrained by the fear of new competitors. Lastly, entry into an industry may be rendered difficult by the existence of goodwill possessed by the established firms. By constant advertising and other methods the existing firms in an industry may have succeeded in securing control over the minds and habits of their customers to such an extent that new firms will find it extremely difficult to induce these customers to buy their products. The buyers may be so much convinced of the superiority of (say) Pears Soaps that they may refuse to purchase any other brand. It will then be necessary to spend large sums of money over a long period of time to overcome this prejudice of the buyers. Hence new firms may hesitate to enter that industry.

Large investment in fixed capital.

Existence of goodwill.

The various phases of combinations : A firm may grow in size either by combining with other firms, or by increasing its own plant. The first method results in the formation of a large variety of organizations. These are known as agreements, pools, cartels and trusts respectively. Each class of combination is further subdivided into smaller sub-classes.

The simplest kind of combination is a sort of more or less loose organization for the purpose of limiting competition among producers. It may be a purely informal understanding between sellers as to the prices to be charged by each. For example, the price of petrol in India is fixed by an informal agreement between the two big competing concerns, *viz.*, the Burma Oil Co., and the Standard Oil Co. There may also be associations for regulating prices as in the Shipping Con-

Pools.

ference of the British shipping concerns which regulate the rates of freight between different ports. Or, there may be an agreement for regulating output. The Indian Jute Mills Association is such an organization. It has often arranged that only a certain proportion of the plants of member firms shall be worked in order to control output and to maintain or increase prices. Lastly, there may be *pools* which are associations worked on the principle that each member shall make over a fixed sum per unit of output to a common fund, from which a division is to be made according to a pre-arranged plan. In all these forms of combinations, the agreements are generally for a fixed period and the internal organization of each firm is left untouched.

Cartels.

Another form, akin to the pool, is the *Cartel,* which is the usual form in Germany. It means a still further advance upon the pool. The competing producers establish a company in which they hold shares. It is organized under the name of a selling bureau. It fixes the price as well as the output. This bureau fixes the quota of output for each firm and the selling prices, and generally manages the entire business of selling, taking all orders, etc. In our own country this plan is being gradually adopted. The Cement Marketing Board of India and the Indian Sugar Syndicate are examples of this type.

Trusts.

Another form of combination is the big *trust.* Originally it meant a special kind of combination. The controlling shareholders of the various companies made over their shares to a board of trustees who held them as trustees for the former. In this way, the trustees secured control over the combining firms, and managed them as one concern. Now-a-days, however, any big combination formed by the fusion of a number of firms is called a "trust".

Holding Company.

Besides those, a different form is *"the holding company."* When the formation of trusts was declared illegal in America, the ingenuity of lawyers evolved this type of combination. Instead of a board of trustees, a separate corporation is organized to own the

controlling shares of the various firms. The holding company controls the policy of all subsidiary concerns.

Merger.

Lastly, there is the *merger,* or complete consolidation. The different concerns dissolve themselves and form a single company which owns the property of all. Unlike the pool and the cartel, the combining firms lose their individual, independent existence.

International cartels : In recent years, the combination movement has become international in its scope. In general, these agreements allot the home market to each national group, and make sales allotments or establish prices in third countries. Often agreements are entered into, dividing the territory, or the prices to be charged in different markets. In the copper industry, there is an international syndicate which controls 90 per cent of the copper production of the world. The central office, the Copper Export Trading Company, is in Brussels. Other industries such as steel rails, cement, etc., are organized in cartels.

Relative merits of cartels and trusts : Trusts are a closer form of combination than cartels. While in a cartel, different firms retain their separate existence, combining for particular purposes including marketing, a trust is formed by the consolidation of a number of firms, which no longer retain their separate existence. There are many reasons why a particular combination has taken the form of a cartel, while another is formed as a trust. The reasons are partly personal, partly legal and to some extent economic. The individuals responsible for the formation of combinations may have personal preference or dislike for particular forms of organization ; or the laws of the country might allow them to form only a particular type of combination. In addition to these, the relative advantages of these two forms of organization are also an important factor in determining whether the organisers will choose one form in preference to the other.

In industries where large-scale production yields substantial economies, the trust is likely to prove a better organization than the cartel. In a cartel no firm is shut down, each retains its separate organization, and possibly none is enabled to expand its size. No firm, or the cartel as a whole, will

secure the economies of large-scale production. In a trust, the inefficient or small plants may be shut down, and the more efficient plants may be expanded in size. The efficiency of the whole unit will increase and it may secure economies of scale. Secondly, a trust is likely to prove a more stable organization than a cartel. A cartel consists of many firms, whose interests may have driven them at one time to combine. But as soon as these conditions change, their interests may differ, leading them to advocate different and often opposite policies. This may lead to the break-up of the cartel agreement. But as the different firms are consolidated in a trust, there will be a common policy in all firms and unity of control. Thirdly, a trust may be in a more favourable position to raise capital in the market than a cartel. A trust is a large-scale organization and is likely to be better known in the market than the individual firms (each of a smaller size) joined together in a cartel.

But the trust form of combination also gives rise to some difficulties, which may be absent in a cartel. In the first place, a cartel may include all the important firms in an industry, and so may be in a better position to enjoy monopoly profits than a trust, which seldom covers the whole industry. Secondly, the fact that the different firms retain their separate existence in a cartel may prove to be a source of strength. The whole organization thus retains a measure of elasticity, putting it in a better position to meet changing situations than the trust. The organization of a trust may prove to be unwieldy in comparison and it may lack elasticity. In addition, a trust is likely to prove more expensive to form than is a cartel. When a trust is being formed, the promoters may have to pay excessively large sums of money for buying out possible competitors; or they may have to buy old, obsolete plants in order to secure a merger of rival firms. These plants have to be closed down, but the trust has to go on paying interest on the purchase price. Thus trusts have often to bear a heavy financial burden. The expenses of forming a cartel are not likely to be so high as there is no necessity to buy out a rival plant, if only to shut it down. Lastly, the desire for more and more power may

drive a businessman to form a big trust whose size may become larger than the optimum for the industry. In that case, the diseconomies of large-scale management will begin to appear.

Each of these two forms of combination has important advantages as well as difficulties, and the formation of either is determined by these and many other considerations.

Process of growth : Many monopolies have been formed by the combination of several firms into one organization. Such a combination may take one of the two forms. A firm may combine with others producing the same commodity; or it may combine with firms producing its raw materials or selling its products. These processes of growth are known as horizontal combination and vertical combination (or integration).

Vertical combination.

A *vertical* combination is one in which some or all stages of production beginning from the obtaining of raw materials and ending in the preparation of the finished products are combined. As a result of division of labour, different steps in the process of production are generally carried out by different firms. In the iron industry, for example, iron ores are mined by one company, coal is mined by another, pig iron is made by a third, steel by a fourth, while pig iron and steel are manufactured into finished articles by other firms. When some of the successive steps are unified under one management, we have a case of *vertical* combination. The Tata Iron and Steel Company is an example of such a combination. It owns iron ores and some other minerals, operates coal-mines and produces both pig iron and steel. The motive to such a combination is the reduction of certain expenses relating to management and the elimination of profit obtained by the separate firms at each of the successive stages of production. The costs of marketing and advertisement are reduced; a regular supply of raw materials is ensured; and the chance of over-production at any stage of production is greatly reduced. This is also called *"integration of industries"*.

Horizontal combination is an amalgamation or association of a number of enterprises, selling the same commodity, under one management. An integration is a combination of coal mining, iron mining, pig iron making and steel making. Horizontal combination is the association of two or more steel companies, or of two or more coal mines under one control. The motive to such a combination is partly to secure economy of management; and partly to put an end to cut-throat competition and thus to enjoy monopolistic profits. A combination may attain very gigantic proportions so as to be international in scope. The Standard Oil Company is an example of such an organization of international importance.

Horizontal combination.

The main advantages of vertical combination are, first, that it enables a firm to guard against the possibility of a failure of supplies of essential raw materials. An iron and steel firm may not like the fact that its supplies of coal may be cut off due to trade rivalries. So it may try to secure control over some coal mines so as to be in a position to get regular supplies of coal. Or, it may itself start marketing organization in order to push the sale of its products in the market. Secondly, the bringing together of several processes of production under unified control sometimes yields a number of technical economies. For example, when several processes are performed in close proximity, unnecessary handling and transport costs are thereby avoided. In some other cases, economies of fuel may be obtained by combining the processes of production at one place. This is particularly noticeable in the iron and steel industry. The technique of production in that industry is such that considerable fuel economies are obtained when blast furnaces, steel furnaces and rolling mills are all closely united in one place.

The advantages of horizontal combination are that it enables the combining firm to protect itself against the dangers of price-cutting by rivals. As horizontal combination proceeds, it gives rise to monopoly, and so enables a firm to secure monopoly profits.

The tendency towards horizontal combination is usually more prominent than that towards vertical combination. When a firm enters into combination with another producing

a different commodity as in a vertical combination, it will have to take up quite a different line of business; whereas if it combined with another firm producing the same commodity, it will still confine itself to the familiar line of business. So it is more natural for firms to combine horizontally than vertically.

Economies of monopoly : The advantages of monopoly as against perfect competition depend to a large extent on the form in which monopoly is organized. If the monopoly is of the pool or the cartel type, there is no reason to suppose that the individual firms in the combination will be more efficient than competing concerns. But if the monopoly is of the complete merger type, it may possess a number of advantages as against firms selling in perfect competition. It may be pointed out that standardization, specialization and thorough organization may enable a multitude of businesses of moderate size to attain nearly every important efficiency and economy that is obtained by trusts. The chief economies of production that only monopolies may secure are three or four in number. A monopoly can specialize the different plants on a narrow range of work, or take steps to supply each market from the nearest plant, thus avoiding the expenses of unnecessary transport of goods. Under competitive conditions a textile mill of Ahmedabad may send its products to Bombay, while a Bombay mill may sell its goods at Ahmedabad. If the different mills combine, they may take steps to supply the Bombay market from the mills at Bombay, thereby saving the expenses of transport. Secondly, monopoly secures another advantage. It will be able to pool all knowledge and patents, and to make available to each firm the experience and the trade secrets of others. Thus the technical knowledge and patents available to each firm will be greater under monopoly than under competition. Thirdly, the existence of a large number of firms each actively competing with others, increases the degree of risk and uncertainty which confront each firm. It is not always a difficult task to forecast the probable demand for jute goods for a year. But

Marketing economics.

Pooling of knowledge and patents.

The task of management is easier.

it is practically impossible to foretell the extent of the total market for jute goods that each mill will be able to capture. The larger the number of firms, the greater the uncertainty, and the more difficult will be the task of management. The monopolist has not to face such uncertainties. So the task of management may be easier under monopoly than under competition.

The monopolist secures another advantage. When there are many competing firms, each has to spend large sums of money in competitive advertising. But a large portion of such expenditure on advertising and selling organization will be unnecessary under monopoly. Lastly, it has been claimed that trusts mitigate the fluctuations of industry, and make for business stability. They can devote funds to constructive work instead of wasting them in destructive competition. They promote steadiness of output and prices, because it is to their interest in view of their giant sizes. Taussig believes that there is a possibility of such a stability. But on the other hand fluctuations might be increased by patched-up combinations, attempts to raise profits, overcapitalization and speculation. The writer of a recent study on monopolies has come to the conclusion[1] that "the evidence that they (*i.e.*, trusts) contribute to the stability of industrial output remains very slight."

No waste of competitive advertisements.

Disadvantages : The main disadvantage of a monopoly is that it results in a mal-distribution of productive resources. Under competitive conditions, the production of every commodity will be carried to the point at which the value of net product of the additional resources will be equal to the price of the commodity. The monopolist will produce it upto the point at which the marginal cost is equal to the marginal revenue, and the latter is less than the price of the commodity. Hence in almost every case, the output under monopoly will be less than the socially desirable output (*i.e.*, that which prevails under perfect competition). There is another disadvantage. With some exceptions, the price that a monopilist charges for his product is usually higher than

[1] *Monopoly.* E. A. G. Robinson, p. 166.

the competitive price. Hence there takes place a transfer of purchasing power from the buyers of these goods to the monopolists,—a transfer in most cases from poorer groups to rich entrepreneurs. This is likely to increase the prevailing inequality of incomes,—a most undesirable feature. Moreover, by virtue of his strategic position, the monopolist possesses the power to exploit labour and other factors of production, and pay lower rates of remuneration than they would have obtained under competitive conditions.

Political corruption.

Combinations often corrupt the body politic by utilising them to serve their own ends. Having vast resources at their command, they often bribe the legislators and judges for passing laws and deciding cases in their favour.

Speculation and over-capitalization.

Speculation and over-capitalization are the special disadvantages of industrial combinations. Watering of capital is frequent and hence the speculative elements are encouraged. Trusts may sometimes assume so gigantic sizes that the problem of management becomes increasingly difficult and with the death of some able managers in the combination, the business may fail for want of capable managers.[2]

Control of monopoly : We have seen that under monopoly, the output is usually less than the competitive output, and the price is higher than the competitive price. The community would gain if the state intervenes and takes steps to remove the disadvantages of monopoly. These measures may be divided into four important groups ;—(*a*) suppression of unfair practices, (*b*) taxes and bounties to control the output of the different industries, (*c*) control of monopoly prices, and (*d*) anti-combination laws.

Suppression of unfair competition.

(a) *Suppression of unfair practices.* This method aims at prohibiting the exercise of unfair practices which many concerns usually adopt for driving out competitors. The most important of such practices is that of price-cutting. In our country, for example, the big steamship companies had often resorted to destructive rate-cutting in order to drive out new

[2] *For Monopoly prices,* see Chapter 18.

competitors. After the new competitors were driven out, the price was again raised to a high level. The state may prohibit such practices by laying down that once prices are reduced, they could not be raised again. But the main defects will be that this would also prevent the concerns from exercising the perfectly legitimate method of experimental reduction in price with a view to developing new clientele, and would, moreover, fail to ensure perfect competition. It is not easy to define what is an unfair practice.

(b) *Taxes and bounties.* Theoretically, this is a good device for removing the disadvantages of monopoly. The state may levy any amount of taxes on the factors of production in order to prevent their entry into an over-developed industry, and by giving adequate subsidies may encourage the entry of factors into an undeveloped or monopolized industry. The state should apply this method in such a way that the marginal net products of the factors are equal in all industries. Similarly, the state may ensure that there will be firms of optimum size in an industry by levying taxes on those firms which are of more than optimum size, and by giving subsidies to those firms which are of less than optimum size. But the main difficulty is that it is not possible for the state to determine either the marginal net products of the factors of production, or the optimum size of the firms.

(c) *Control of prices.* The state may try to secure that the price charged by a monopolist will be equal to the competitive price. This can be done by either of these two methods: (*i*) The state may fix the maximum rate of profit that can be distributed on the capital of a concern, and lay down that if the actual profits earned are higher, the prices must be lowered. But the main difficulty is that it is not easy to determine the actual amount of capital invested in a concern (the capital stock may, for example, be watered) or the competitive or reasonable price. Moreover, this might discourage efficient management. (*ii*) The state may fix maximum commodity prices, and maximum factor prices. But there are great practical difficulties in connection with this method. Theoretically, a different maximum price would have to be fixed for every different type or quality of

Fixing of maximum rate of profit, or maximum prices.

the monopolized commodity ; and all these prices would have to be constantly revised as the technical methods of production and the tastes of the consumers change.

(d) *Anti-combination laws.* In view of the defects of other methods of control, governments have been forced in some countries to take the ultimate step of breaking up monopolies. The formation of combinations is definitely prohibited by laws. The U.S.A. passed the Sherman Anti-Trust Law and the Clayton Act for the purpose of preventing the formation of combinations. Here again difficulties arise. The wits of lawyers have devised steps to get round the provisions of the law. When one particular form of monopolies is banned, the organisers may devise another type of combination in order to avoid the provisions of the law. This has actually happened in the U.S.A. Moreover, even if these measures succeed in preventing the formation of monopolies, they will not necessarily ensure perfect competition. There is no guarantee that these will bring into existence a large number of independent firms, each of the optimum size ; or they will cure the imperfections of the market for the sale of the product.

CHAPTER IX

MARKETS

From time immemorial all exchange operations have been carried on in some market place. In fact, the progress of industrialization is dependent on the evolution of wider and more perfect markets. If the market for a commodity is extremely limited, the output of that commodity will also be limited. As the market widens, and with it, the demand increases, its production will be stimulated. As Adam Smith pointed out long ago, division of labour is limited by the extent of the market. Hence the importance of a study of the features of a market before we start seriously to describe the theory of value.

Exchange presupposes a market.

Definition of a market : In ordinary language, the term, 'market', refers to a certain place where goods are offered for sale. The weekly village fair, where both sellers and buyers throng, and conduct their various transactions leisurely and noisily, is the best illustration of a market of ordinary speech. But in economic theory, the term 'market' does not refer to a place or any region; rather, it refers to a commodity or commodities, which are bought and sold under given conditions. For example, when we speak in Economics of *the wheat market*, we do not refer to the particular place where wheat is bought or sold. Similarly, the stock exchange market refers, not to any definite place, but simply to the fact that shares are freely bought and sold at competitive prices.

What is a market in economic theory?

A market may be classified in two ways:—according to space, or according to time. The area of a market depends on the nature of competition. If competition is world-wide, the market will be international ; if it is only nation-wide, the market will be national ; if it is local, the market will be local. Hence markets may be international, national or

Classification according to space.

local. Gold and silver are examples of commodities that possess an international market; while at the other end of the scale come the extremely perishable articles, like milk, fresh vegetables, etc., whose market is generally local.

Classification according to time.

A market may also be classified with regard to the period of time which is under consideration. If the period is short, say, for a day only, the supply of a commodity at the command of the sellers is fixed for the time being, and the price will be influenced mainly by the forces of demand. If the period is longer, the supply will be influenced by the cost of producing additional output; and the predominant influence on value will be the forces of supply. Marshall divides markets into four classes on the basis of the period of time:—short period, moderately long period, long period, and secular period. The importance of this classification will be treated in a subsequent chapter.

Factors making for a wide market.

Conditions for a wide market: The general tendency in the modern world is for widening the markets for a commodity. The present industrial revolution has been made possible by the opening out of wide markets. And the industrial revolution, in its turn, is giving rise to factors which are causing an extension of markets. For example, the use of railways, telegraphs, telephones, etc., is tending to make the whole civilized world almost as one market. Nevertheless, there are some special factors which explain why some commodities have world-wide markets, while others have a local market. The conditions which make for a wide market for a commodity are the following:—

(a) *Universal, or very wide demand.* Clearly the larger the demand, the wider must be the market for a commodity.

(b) *Portability.* The commodities must be durable and portable, *i.e.,* they must possess large value in small bulk. Gold and silver are examples of commodities which are durable and have considerable value in small bulk, and hence possess wide markets. While bricks have small value in proportion to their bulk and cannot, therefore, be carried to a long distance. Hence their market is confined to local

areas. Fresh vegetables are not durable, and hence their market is also limited.

(c) *Suitability for sampling.* If exact samples of the commodity can be sent to purchasers at a distance, they can buy it, confident that it will come upto a given standard. If the commodity is such that its samples cannot be taken, then the purchaser must be on the spot to buy it. The market for it will be small in area. Whereas if samples could be sent, it could be bought and sold over a wider area.

(d) *Suitability for grading.* If, further, the commodity could be graded, *i.e.,* if the standards of quality are fixed by a competent authority, then the purchaser could buy without even seeing the samples. Hence the commodity could be exchanged over a far wider area. For example, the quality of coal produced in India is certified as first class coal, second class coal, etc., by the Coal Grading Board ; and the purchaser in the Far East could send orders for first class coal, without seeing the sample.

The more a commodity satisfies these features, the wider will be its market. The best examples of commodities possessing an almost international market are furnished by the precious metals and stock exchange securities of international reputation. The *precious metals* are in demand everywhere, and they are also easily cognizable, portable, and extremely durable. Hence they are bought and sold all over the world.

The market for gold and silver.

The *market for cotton, wheat, iron, copper, etc.,* is also, to some extent, world-wide. As important raw materials of industry, they are in demand in every country. They have been suitably graded and sampled ; and though they possess less value in proportion to their volume, they are yet portable. Hence their markets are highly organized.

The market for wheat, cotton, etc.

On the other side come such articles as *fresh vegetables, milk, etc.* Though they are in general demand, yet they are extremely perishable, and bulky. And so they cannot be carried over to long distances. Sampling and grading are also difficult. Hence they have only a limited local market.

The market for perishable and bulky articles.

Markets and the nature of competition : It is now usual to classify markets on the basis of competition prevailing in the market. The classical writers assumed the existence of perfect competition in their definition of a market. But very few of them analysed the implications of perfect competition. In order that competition may be perfect in a market for a commodity, there should be a large number of buyers and sellers so that no single buyer or seller can influence the market price by his independent action. Each seller accepts the price prevailing in the market and proceeds to sell his output without causing any decline in the price. Suppose that there are about 1,000 sellers of a commodity, each selling 20 units. The total supply is 20,000 units. If a seller increases his output by (say) 5 per cent the total supply will be increased by only one unit. In the place of 20,000 units previously sold, 20,001 units have now to be disposed of. This will not affect the market price of the commodity.

Perfect competition.

Secondly, units of the commodity bought and sold by all buyers and sellers should be exactly similar. Buyers should think that the units of the commodity sold by one seller were not different from those sold by another.

A third condition is that buyers know the prices charged by different sellers in the market and try to buy at the lowest price possible.

In such a market, there can be but one price for any one commodity at a particular time. If not, let us suppose that sellers are charging two prices for the same commodity. Since all buyers know the prices prevailing in the market, they will all go to those sellers who are charging lower prices. If these sellers control a large portion of the total supply, other sellers will then be forced to lower their price to the level charged by the former. If, on the other hand, sellers offering to sell at the lower price control a small supply, competition among buyers will induce them to raise the price to the level at which other sellers will sell. Hence under perfect competition, there can be only one price for a commodity at a given time.

While the classical writers assumed that the existence of such perfect competition was the rule in almost all

markets, this is no longer accepted as valid. In fact, there are very few markets in which competition may be said to be perfect. Probably the only example of such markets is to be found in the case of the commodity exchanges for wheat, cotton, metals, etc. These markets deal in standardised commodities, and the vast majority of buyers and sellers are, more or less, experts in their lines. In the majority of markets, the presence of perfect competition is rare. Hence the practical importance of perfect competition is not very great. But the concept has still value from the standpoint of economic theory. When competition is perfect, this would secure the most efficient organization of production and the best utilization of consumer's goods and productive services. Hence we propose to begin our studies by an examination of the factors determining value under conditions of perfect competition, bearing in mind the fact that in the real markets competition is seldom perfect.

Some writers also make a distinction between perfect competition and pure competition. According to them, pure competition, *i.e.*, the absence of all monopolistic tendencies, exists when the number of buyers and sellers is very large so that no one of them may influence the market price by his action and when all sellers sell a completely homogenous product. Perfect competition will, however, exist where, in addition to the above two conditions (*i.e.*, a large number of buyers and sellers and a homogenous product), entry into the industry is unrestricted and all producers are able to buy factors of production on the same terms.

Markets and the absence of perfect competition : The usual markets in which consumers buy are characterised by the absence of perfect competition. The average consumer has seldom any expert knowledge of the goods and services he buys. These markets are usually characterised by what has been called imperfect competition.

Competition will be imperfect in a market if buyers do not know the prices charged by different sellers, and either because of their ignonarce or inertia, or costs of transport, they do not try to buy in the cheapest market. It will also be imperfect if buyers believe that there are differences (real

Imperfect competition.

or supposed) in the qualities of commodities sold by different sellers. Or, if there are only a few sellers of a commodity, each selling a substantial part of the total supply, competition will also be imperfect. In an imperfect market, sellers may charge more than one price for a commodity to different buyers.

CHAPTER X

DEMAND AND SUPPLY

The concepts of demand and supply are so essential to the discussion of almost all economic problems that it has been stated in derision. "Teach a parrot to say 'supply and demand' in reply to every question, and he will be a good economist." Indeed, a good economist must be careful about what he means by the two words and must be careful in using the apparatus of demand and supply.

Demand : The economist does not define demand in the sense of desire for a commodity. In order that a commodity may be demanded, it must be desired by somebody. But the mere desire for a thing does not constitute demand in the economic sense. "If wishes were horses, beggars might ride." In our childhood, all of us felt a very strong desire for the things on display in the sweatmeatshop or in confectionaries. As on most occasions we had no money, or were not allowed to spend any money, our desire was not demand in the economic sense. It became demand, the moment our parents, perhaps softened by our entreaties, gave some coin to us, with which we ran to the shop and which we offered to the dealer. When the desire for a commodity is backed by the willingness and the ability to spend adequate sums of money, it becomes demand, or effective demand.

Demand has always a reference to the price of a commodity. Nobody can say how much of a commodity he demands unless he knows the price at which it is offered for sale. Demand at a given price means the amount of a commodity that an individual (or the people) is willing to buy at that price. The demand price for a commodity is the price at which each particular unit of the commodity will find a buyer in the market.

The relationship between the amounts of a commodity demanded at different prices is usually shown in the form of a *Demand Schedule.* The demand schedule of an individual for a commodity is a list of the different amounts

of the commodity that he will buy at different prices. It is one of the well-known facts that, as the price of a commodity changes, its demand will also change in the opposite direction. As the price goes up, the demand for the commodity goes down and vice versa. All this is shown in the form of a schedule.

Demand Schedule of an individual for tea.

At the price of Rs. 8 per lb., he will demand 2 lbs.
At the price of Rs. 6 per lb., he will demand 3 lbs.
At the price of Rs. 4 per lb., he will demand 5 lbs.
At the price of Rs. 3 per lb., he will demand 7 lbs.
At the price of Rs. 2 per lb., he will demand 10 lbs.

If we know the individual demand schedules, we can also determine the *market demand schedule*, showing the different amounts of tea that all individuals operating in a market will buy at various prices of tea.

Market Demand Schedule for tea.

Price	Quantity of tea demanded by all buyers.
Rs. 8	1,000 lbs.
Rs. 6	1,500 lbs.
Rs. 4	2,500 lbs.
Rs. 3	3,500 lbs.

Apropos the market demand schedules, can we determine it by simply multiplying the demand schedule of a typical individual by the total number of buyers in the market? Our first difficulty, as we proceed to do this, will be to find out who is the typical individual? The demand schedules of different individuals are not similar. Some of them are rich, and can afford to buy large quantities of tea at various prices, while the majority are poor, and cannot probably afford to buy even 2 lbs. at Rs. 8 per lb. Even among the rich or the poor, tastes and temperaments vary, and some of them may be prepared to buy larger quantities

at given prices than are bought by the majority. So it has been urged that the demand schedules of different individuals show so many peculiarities that we cannot take any particular demand schedule as representing the demand schedules of all individuals and multiply it by the total number of buyers. But in a large market, many of these individual peculiarities will cancel each other, and because of this reason it is possible to form the market demand schedules. "While the individual desire is fitful, the resultant of the desires of all the purchasers is relatively steady, —just as in physics, the forces of the individual molecules are variable and fitful, but the aggregate resultant atmospheric pressure is a steady fifteen pounds per square inch."[1]

The demand schedule is represented in the form of a curve. In fig. 2, the different prices are measured along OY, and the amounts of the commodity demanded at various prices are measured along the OX axis.

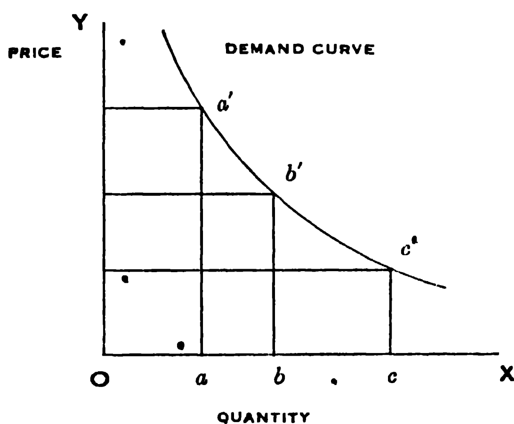


FIG. 2

From the curve we know that when the price of tea is *aa'*, buyers will purchase only *Oa* amount of tea ; when the price falls to *bb'*, they will buy *Ob* units of tea, etc.

Law of demand : It is obvious from the discussion of the demand schedule that, other things being equal, the

[1] Fisher I. *Elementary Principles of Economics.* P. 301.

amount of a commodity people will buy increases with every fall in the price; or decreases with every rise in the price. Demand responds to price in the reverse direction. This is the law of demand. To state the same thing in another way, larger quantities of a commodity can only be sold at lower prices.

According to this law, as the price of a commodity falls, its demand increases. Why? This is due to two reasons. First, as the price of a commodity falls, people will tend to substitute it for other commodities whose prices remain unchanged, and therefore become relatively higher than before. When the price of tea falls, the prices of coffee or cocoa remaining the same as before, some people will decide to buy more tea and less coffee or cocoa. They will tend to substitute the relatively cheaper commodity, tea, for the relatively dearer commodity, coffee or cocoa. This has been called "the substitution effect" by Hicks.[2] Secondly, as the price of one pound of tea falls from Rs. 6 to Rs. 4, the consumer finds that he or she has to spend only Rs. 12 for 3 lbs. of tea, instead of Rs. 18. He or she will consider himself or herself richer by Rs. 6; it is as if his or her income has risen by that amount, and therefore he or she may decide that he or she may afford to buy more tea. So the demand for tea will rise. This has been called by Mr. Hicks[2] as "the income effect".

In stating the law of demand, we have used the expression, "other things being equal" (*ceteris paribus*). This conceals important qualifications of the law. Among the other things, mention might be made of the prices of substitutes, the incomes of the buyers, the tastes of the buyers, etc. In other words, a fall in the price of tea will lead to increased demand for tea only if, in the meantime, the prices of substitutes (like coffee or cocoa) or the tastes of the consumers, or the purchasing power of the consumers etc. do not change. If, along with the fall in the price of tea, the prices of coffee or cocoa have fallen still further, the demand for tea may not increase at all. Or, if, the tastes of the consumers for tea declines, or if their money incomes

[2] Hicks J. R.: *Value and Capital*, pp. 31-2.

fall, they may not buy larger quantities of tea when its price falls. Moreover, if a commodity is regarded as 'inferior' by a consumer, then a rise in his money income will probably lead him to substitute a more expensive commodity in its place, even though its price falls in the meantime. In that case, a fall in the price of the 'inferior' commodity may not lead to increased demand.[3]

Though the usual rule is that at higher prices demand becomes less, the opposite also happens on a number of occasions. For example, in the case of certain commodities, like diamonds, the higher the price, the greater may be their attractiveness. Because of the very high price of diamonds, display of them is regarded as a sign of distinction by a number of people. Hence if their price rises, demand for diamonds may increase instead of falling. Secondly, if a rise in the price of a commodity is regarded by the people as to be followed by further rises in the future, they may hasten to buy larger quantities in spite of the rise in prices. In a poor community, the general level of money incomes may be so low that the people have to spend the major portion of their incomes on wheat or rice, leaving only a small sum to be spent on other kinds of food. If the prices of wheat or rice increase, the people may be forced to give up buying other kinds of food and buy more wheat or rice than before in order to fill their stomach. Hence the demand for wheat or rice may actually increase when their prices rise.

Supply : The supply of a commodity means the total quantity of the commodity that sellers offer to sell at different prices from the stock of that commodity existing at any given time. The latter refers to the total quantity that exists in a market, while the supply means that amount which sellers are willing to sell at a particular price. Supply, therefore, means supply at a price, just as demand means demand at a price.

Supply and stock.

[3] For example, vegetable ghee may be regarded as an 'inferior' commodity. A consumer, whose money income was such that he could not afford to buy ghee in desired quantities, may decide to buy less vegetable ghee and more real ghee when his income increases. In that case, the demand for the vegetable product may decline in spite of any fall in its price.

The amount of a commodity that sellers offer for sale varies with the price that buyers are willing to pay. When the price rises in the market, sellers will be willing to sell larger quantities of the commodity. In other words, the supply will increase when the price is high. The opposite happens when the price is low in the market. This tendency is known as the *law of supply*. This law states that as the price of a commodity rises or falls, its supply will tend to increase or decrease. This tendency works in an opposite direction from that indicated by the law of demand.

Law of supply.

This tendency is represented in the graph in Fig. 3. Along OX we measure the amount of a commodity that is offered for sale at different prices. The different prices are

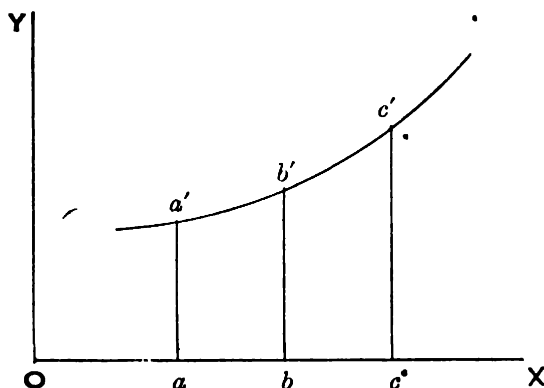


FIG. 3

measured along OY. When the price is *aa'*, sellers will offer O*a* amount for sale; when the price rises to *bb'*, sellers become willing to sell O*b* amount, and so on. The supply curve *a'c'* thus slopes upward.

There are, of course, exceptions to this law. It may quite happen that the supply is more or less fixed, as in the case of a painting by Raphæl, and will not vary with changes in price. Or, it may happen in exceptional cases that as the price rises, sellers offer a smaller quantity for sale than before. This, it is alleged, is the experience of

many employers of labour in India. The workers have a very low standard of living, and feel very few wants. When employers offered higher money wages for their services, workers were able to satisfy their meagre wants by working smaller hours or days in the month. So higher wages were followed by increased absenteeism from work. This means that as the prices of their services became higher, workers offered smaller services for sale. After a certain stage, therefore, the supply curve runs downwards. But these cases are so few that the law of supply holds good almost in all cases.

Equilibrium of demand and supply : We are now in a position to combine the demand and the supply curves. Let us take the two lists of the demand and the supply schedules in one table.

Buyers of tea will buy	at the price	Sellers of tea will sell
1,000 lbs.	Rs. 8	4,000 lbs.
1,500 lbs.	Rs. 6	3,500 lbs.
2,500 lbs.	Rs. 4	2,500 lbs.
3,500 lbs.	Rs. 3	1,200 lbs.

From this combined table we find that when the price of tea is Rs. 4 per lb., both the amount demanded and the amount supplied will be equal. This is the *equilibrium price*. If this price prevails in the market, all buyers who want to buy at this price will be able to satisfy their demand ; and all sellers will be able to sell the amount they want to sell at this price. If the price of tea were higher than Rs. 4, (say) Rs. 6, sellers would want to sell 3,500 lbs. of tea, while buyers would buy only 1,500 lbs. As after 1,500 lbs. of tea were sold, there would be sellers who were willing to sell an additional amount of 1,000 lbs. of tea at even Rs. 4 per lb., the price of tea would come down in the market. If, however, the price is Rs. 3, buyers are anxious to buy 3,500 lbs., while sellers will sell only 1,200 lbs. There will be a group of unsatisfied buyers who

are willing to pay Rs. 4 for an additional 1,300 lbs. of tea, and the price of tea will go up.

In Fig. 4, the curve DD′ represents the demand for the commodity (tea); and SS′ represents the supply curve for the commodity. The two curves intersect each other at P.

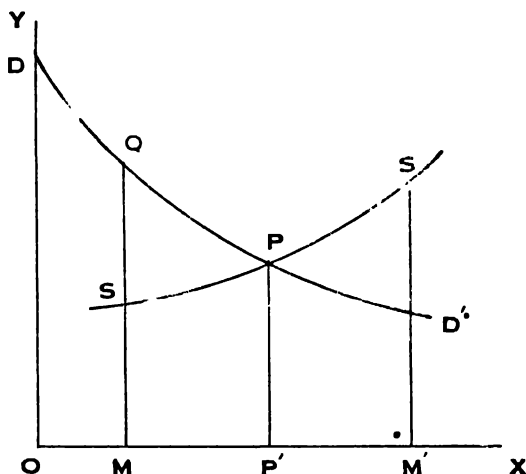


FIG. 4

PP′ therefore measures the equilibrium price at which buyers will be willing to purchase OP′ amount of tea and sellers will also sell the OP′ amount. If the actual price is equal to QM, then from the demand curve, we know that buyers will purchase at that price only OM amount of tea, while sellers are willing to sell the OM′ amount. The anxiety of the sellers to sell will drive the price down again to PP′, the true equilibrium price.

Changes in demand and supply: We pass on now to a consideration of the effects of changing demand and supply.

The demand for a commodity may increase or decrease during a given period. The phrase, "increase or decrease of demand" should be carefully interpreted. If, owing to some changes in the conditions of supply, the price of a commodity rises or falls, its demand will also decline or increase. This increase or decrease in demand following a price change is not referred to when we speak of a change

in demand. In this case, the demand schedule does not change, but the amount demanded changes in response to changes in prices.

Demand may change for other reasons as well. First, if the number of consumers changes on account of the growth of population, demand for a commodity may change independently of changes in prices. In a country with increasing population, the demands for commodities are likely to increase on account of the increase in the number of buyers. Secondly, the demand for a commodity may change because the tastes of the consumers have changed in the meantime. The demand for cigarettes has risen, while that for *bidis* has fallen on account of a change in taste in favour of the former. Thirdly, demand may change because of a change in the incomes of the consumers. At higher incomes, demand for certain things will increase, while that for the "inferior goods" may decline. Lastly, demand for a commodity may change because the prices of certain other goods change. For example, when the price of coffee falls, the demand for tea may increase though the price of tea remains the same. Because of these reasons demand for a commodity may change even though there is no change in its price. In such a case, the old demand curve will no longer be valid, but will be shifted upwards or downwards as in the following graph.

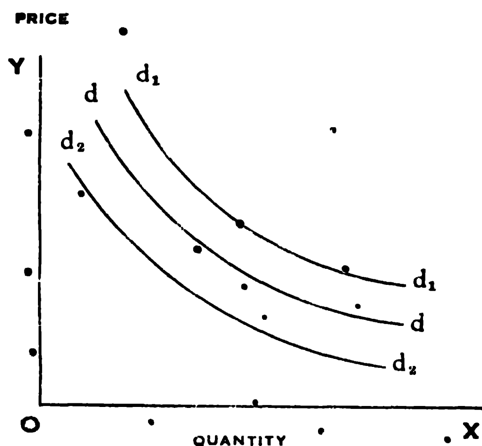


FIG. 5

The original demand curve is dd. When the demand increases, the curve is to be moved upwards, and the new position is to be represented by d_1 d_1. If demand falls, the whole curve will shift to d_2d_2. When demand changes, buyers will buy either larger or smaller quantities at all prices.

Changes in supply : As with demand, a change in supply means a shifting of the whole supply curve SS in the upward or downward direction.

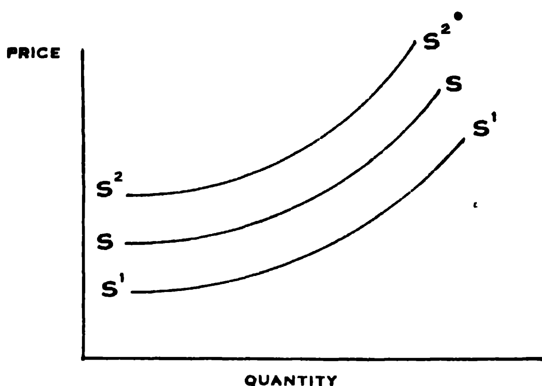


FIG. 6

Here SS is the original supply curve, increase in supply is represented by S_1 S_1. It means that at all prices more is

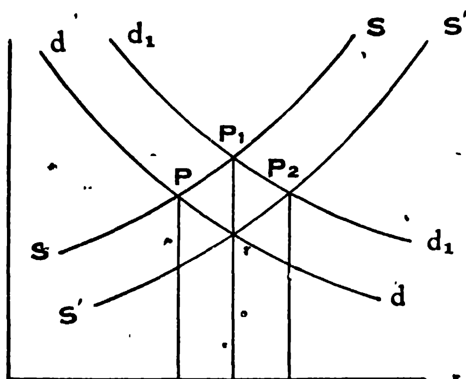


FIG. 7

forthcoming, or the same amounts are offered for sale at lower prices. A fall in supply is represented by S_2S_2.

Equilibrium with demand and supply : Let us suppose that the demand for a commodity increases, and the demand curve moved into the new position d_1d_1. Since supply may not change at once, the new demand curve will intersect the old supply curve SS at P^1 instead of P. The price will rise. If the supply also increases, the new supply curve will be S_1S_1, intersecting the new demand curve at P_2. This price may be lower or higher than the original price P, depending on the relative changes in demand and supply. When the change in the supply curve is relatively larger than that in the demand curve, the new price may be lower than the original price; where the change in the demand curve is larger, the new price will be higher.

CHAPTER XI

CHARACTERISTICS OF THE DEMAND CURVE

Elasticity of demand : When the price of a commodity changes, its demand will also change. But the rate of change in demand may be rapid in the case of some commodities and slow in the case of others. The rate at which demand for a commodity will change when its price changes[1] is known as elasticity of demand. It is a measure of the responsiveness of demand to a change in price. It is equal to the ratio:

$$E = \frac{\text{A proportionate change in demand}}{\text{A proportionate change in the price}}$$

If both the price and the demand change by 1 per cent, the ratio will be equal to one. This is the case of unit-elasticity of demand. If, however, a 1 per cent change in price leads to a 2 per cent change in demand, the ratio will be equal to 2. In this case, elasticity of demand is regarded as greater than unity. In the last case, when a 1 per cent change in price is followed by ½ per cent change in demand, the ratio is less than one, and the elasticity of demand is regarded as less than unity. When elasticity of demand is greater than unity, this is regarded as an instance of *elastic* demand; when it is less than unity, it is a case of *inelastic* demand.

In cases of elastic demand, we have seen that a 1 per cent change in price leads to more than 1 per cent change in demand. Now the total proceeds obtained from the sale of a commodity are equal to the price multiplied by the quantity sold. The total sale proceeds are called the total revenue.

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[1] The change in price must be very small; otherwise there will be certain difficulties. Let us suppose that the price of tea falls from Rs. 6/- per lb. to Rs. 5/-. If we calculate the rate of change in price on the basis of the higher price, price falls by 16·6 per cent. On the basis of the lower price (*i.e.*, Rs. 5/-), price falls by 20 per cent. Which of these two are we to take for measuring elasticity? The above difficulty does not arise when the absolute changes in price are very small. The best way out of this difficulty is to measure elasticity on the basis of changes in the total revenue.

If the quantity demanded increases by more than 1 per cent when the price falls by 1 per cent, the total revenue will increase. In other words, when the elasticity of demand is greater than unity, total revenue will increase when the price falls, or will decrease when the price rises. When the elasticity of demand is less than unity, total revenue will increase when the price rises, and will decrease when the price falls. In cases of unit-elasticity, total revenue will remain the same, whatever the change in price. Let us illustrate the three cases by means of an example.

TABLE I

The relation between the price of tea per lb. and quantity sold.

Price	*Quantity sold*	*Total revenue*
Rs. 6/- per lb.	1000 lbs.	Rs. 6,000.
Rs. 5/- per lb.	1200 lbs.	Rs. 6,000.
Rs. 4/- per lb.	1500 lbs.	Rs. 6,000.

In this case, whatever the percentage change in price, the quantity sold changes in the opposite direction by exactly the same percentage and the total revenue remains the same. Elasticity of demand is equal to unity.

In another market, a quite different relationship might prevail. This is illustrated in table II:

TABLE II

Price	*Quantity sold*	*Total revenue*
Rs. 6/-	1000 lbs.	Rs. 6,000.
Rs. 5/-	1300 lbs.	Rs. 6,500.
Rs. 4/-	1700 lbs.	Rs. 6,800.

Here the quantity sold increases by a large percentage than that of the price so that the total revenue increases as the price drops. Elasticity of demand is greater than unity.

The third case is given in table III:

TABLE III

Price	*Quantity sold*	*Total revenue*
Rs. 6/-	1000 lbs.	Rs. 6,000.
Rs. 5/-	1100 lbs.	Rs. 5,500.
Rs. 4/-	1250 lbs.	Rs. 5,000.

In this market, the total revenue decreases as the price falls. Elasticity of demand is less than unity; or simply demand is inelastic. Thus we can determine the elasticity of demand by looking to the changes in the total revenue following changes in prices.

These three cases are illustrated on the following curves.

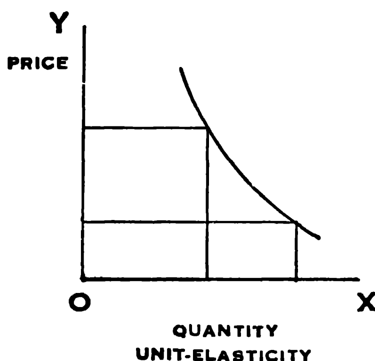


FIG. 8

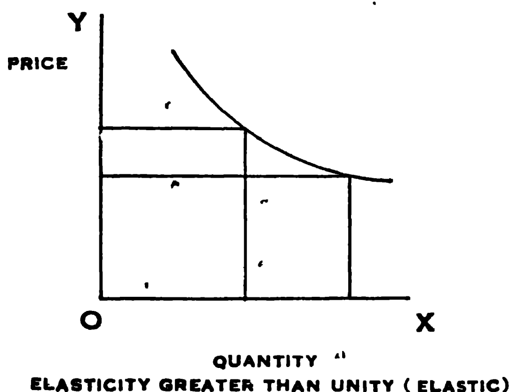
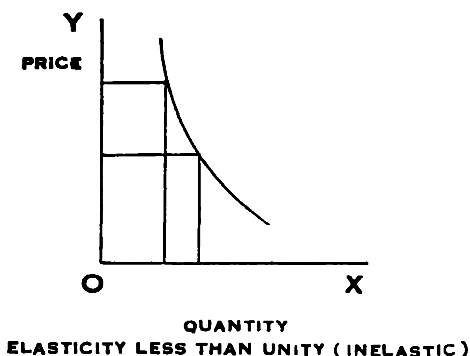


FIG. 9



ELASTICITY LESS THAN UNITY (INELASTIC)

FIG. 10

Factors determining elasticity of demand : Why is the elasticity of demand for a commodity or for the product of a firm high and that for another low? What factors determine the elasticity of demand for a commodity?

Elasticity is high if there are substitutes.

The most important factor determining the elasticity of demand for a commodity is the possibility of finding substitutes for it. If good substitutes are available for a commodity, its demand will be highly elastic. If the price of tea rises, and that of coffee does not, then a good number of people will change over from tea to coffee. They will drink more coffee and less tea than before the rise in prices. Hence the demand for tea will fall off by a large percentage when its price rises. Conversely, when there are no satisfactory substitutes as in the case of salt, consumers cannot satisfy their needs by purchasing other goods. So its demand will not fall off materially when its price rises a little.

It is for this reason that the demand for necessaries is generally inelastic, while that for luxuries is elastic. In the case of such necessaries as salt, wheat, rice, etc., buyers feel that these are practically essential to their physical well-being, and it is not possible to find good substitutes for them. Hence the demand for necessaries is inelastic. Most families would contrive to maintain the purchases of necessary food articles even if their prices rise a little. The desire for luxuries can,

however, be satisfied in alternative ways. For example, if the price of oranges go up, one can easily turn to (say) bananas. If the price of meat is higher, one can buy more fish or more eggs and less meat than before. In this way the demand for luxuries is likely to be elastic.

The possibility of substituting one commodity by others will also depend on its price, and on the average level of money incomes of its buyers. Demand for the cheapest articles is usually very inelastic. Because their prices are already very low, no substitutes are available if their prices rise a little. Salt is usually sold at such a low price that it is not possible to find equally good substitutes even at slightly higher prices. Similarly, the sale of an article may not show any great response to a change in price, because it is brought mainly by people who can disregard the price change. Hence rich people have in general a less elastic demand than poor people. To the rich a 10 per cent rise in the price of a commodity ordinarily sold for Rs. 4 or Rs. 5 will be of little consequence. They will not bother to find out substitutes for the commodity ; they won't probably feel that it is necessary to switch over to substitutes.

The desire to find out a substitute for a commodity will be low if the total expenditure on the commodity forms a very small part of the total income of an individual. In that case, a small rise in its price will be very nearly disregarded as the sum affected is too small to bother.

The possibility of substituting one commodity for others will increase when the commodity can be put to a variety of uses. For example, electricity can be used for lighting, cooking, or heating the room during the winter or for keeping it cool during the summer, etc. In each use, it has substitutes ; kerosene, and candles for lighting, coal and gas for cooking and heating. Let us suppose that at the present price for one unit of electricity, an individual can profitably use it for only lighting purposes. For cooking and heating, the price is too high in comparison with the prices of coal or gas. When the price of electricity falls, it may become cheaper to use it for cooking and heating. It will, therefore, tend to displace coal and gas in these uses, and its sale will increase by a large

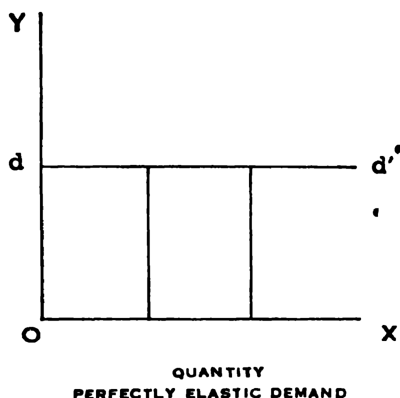
percentage. The demand for electricity, or for other articles having a variety of uses will be elastic.

Further notes on the elasticity of demand : The concept of elasticity of demand that we have been discussing is known as the *"price-elasticity of demand."* It is the ratio of a small proportionate change in quantity to a proportionate change in price. It measures the way in which the demand for a product changes in response to a change in its price. It should also be noted that this concept of elasticity refers to a point on the demand curve. We measure the response of demand to an indefinitely small change in price *at a particular point* on the demand curve. Each point on the demand curve may have a separate elasticity, and the latter may, and does differ from place to place on the demand curve. The demand for a commodity may be relatively inelastic at both high and low prices, and elastic over the middle range of prices.

The demand for a commodity may also be elastic or inelastic in response to changes in the money incomes of the consumers. As our incomes rise, we usually increase our consumption of certain articles at a faster rate than that in the case of other commodities. As we grow richer, most of us spend more money on such food as meat, eggs or milk, and a smaller proportion of our income on the common foodstuffs. In other words, the demand for some articles is elastic in response to changes in money incomes. This is known as the *income-elasticity of demand,* which is the ratio of the percentage change in the quantity demanded to the percentage change in incomes, prices and other things remaining constant. This concept is valuable in analysing the effects of fluctuations in incomes on the prices and output of different groups of commodities.

We have already discussed three different cases of elasticity,—unit-elasticity, relatively elastic demand and relatively inelastic demand. It is necessary to mention two other cases of elasticity,—the two extremes,—perfectly elastic and perfectly inelastic demand. A *perfectly elastic* demand exists when an indefinitely small change in the price of a product leads to an infinitely large change in the quantity demanded.

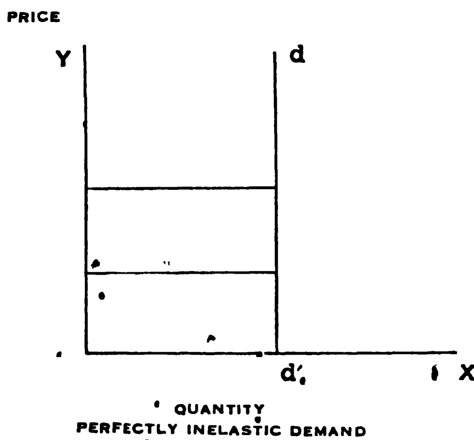
At the other extreme, there is the case of *perfectly inelastic* demand, when, whatever the change in price, the quantity



PERFECTLY ELASTIC DEMAND

FIG. 11

demanded remains the same. The case of perfectly elastic demand is represented on the curve by a horizontal line, while that of perfectly inelastic demand is represented by a vertical line.



PERFECTLY INELASTIC DEMAND

FIG. 12

We have so long been studying individual demand schedules and the total demand or an industry demand schedule for a particular commodity. Such demand schedules

cannot be perfectly elastic. As everyone of us possesses limited incomes, it will not be possible for us to buy unlimited quantities of a commodity. But the demand curve facing any individual seller under conditions of perfect competition may be perfectly elastic. It is to an examination of the relation between the character of an industry and the demand curve that we must turn.

The industry demand curve (or the total demand curve) shows how much of a commodity produced by an industry will be demanded at different prices during a given period of time. It is the combined demand for the combined output of an industry. Looked at from the point of view of the sellers, such a demand curve will show the total amount that all of them will be able to sell at different prices. It does not tell them how much each of them will be able to sell out of the total demand. Of course, if the total demand for the product is large, an individual seller may expect to sell a larger output than if the total demand is small. But how much of the total demand he will be able to meet will depend primarily on his *individual seller's demand curve.* Such a demand curve will tell him how much output he will be able to sell at each possible price. The character of the individual seller's demand curve depends, partly upon the character of the industry demand curve, and partly upon the character of competition in the industry. Given the industry demand schedule, the elasticity of the demand curve facing each individual seller depends on the nature of competition prevailing in the industry.

Several types of situation are imaginable regarding the competitive position of different sellers. In one extreme, there may be many sellers, each selling an identical product. This is the case of perfect competition. Or, there may be many sellers, selling what is called differentiated products. This is the case of monopolistic competition. Lastly, there may be one seller, a case of pure monopoly.

In a perfectly competitive market, there are many sellers, selling an identical product. The output produced by each seller is a very small part of the total output. He can, therefore, sell all he can produce at the current market price, without depressing that price. If he raises his price above

the market price, he will not be able to sell anything, as all buyers will then buy from other sellers at the market price. If he charges a price lower than the market price, all buyers will go to him, and he will be able to sell all he can produce. The demand curve facing a seller in perfect competition is thus perfectly elastic, while it is quite possible that the industry demand curve is inelastic. For example, the industry demand curve for wheat is inelastic. But the demand curve facing each seller of wheat (there being usually a large number of sellers of wheat selling an identical product) will be perfectly elastic.

In the other extreme case, that of pure monopoly, there is only one seller, selling a product for which there are no close substitutes. The demand curve facing the seller is the industry demand curve, which is likely to be inelastic because of the difficulty of getting substitutes.

In monopolistic competition, where there are many sellers, selling differentiated products, products of different sellers are not perfect substitutes. But they are close substitutes. Each seller, therefore, possesses some degree of monopoly in the sale of his product, and can raise his price a little without driving away the majority of his customers. The demand curve facing such a seller is not perfectly elastic. It would ordinarily slope downward to the right, depending on the strength of the consumer's preferences. The more strongly consumers prefer the products of different sellers, the less will be the elasticity of the demand curve facing each seller.

If there are few sellers in an industry, each of them will then play an important part in influencing changes in prices. Quite apart from the reactions of his policy on others, each seller knows that his attempt to sell an increased output will tend to lower the price. Even if all of them sell an identical product, each seller has fewer competitors from whom to draw customers by lowering prices. If they sell branded articles, consumers have fewer alternative choices if the rise in price makes them seek a new brand. On the whole, therefore, sales will be less responsive to changes in prices than in the case of many sellers, and the demand curve facing each seller will have low elasticity.

CHAPTER XII

FORCES BEHIND THE DEMAND CURVE

Are there any factors which lie behind the demand curve and shape its downward direction? According to classical writers, whose greatest exponent was Prof. Marshall, the main force lying behind the demand curve is the celebrated law of diminishing utility. We are already familiar with the meaning of the expression, utility. It simply means the capacity to satisfy a given desire. When we say that a commodity has high utility, all that we mean is that it is intensely desired by somebody who is prepared to pay a high price in exchange for it.

Law of diminishing utility : The utility of a commodity to an individual, *i.e.* the extent to which it is desired by him, depends on the amount of that commodity already possessed by him. The utility of a pair of shoes will be higher to an individual who does not possess any shoes than to another who already possesses three similar pairs of shoes. In other words, the utility of several units of a commodity to an individual diminishes with every increase in his stock of that commodity. This tendency towards diminishing utilities from successive units of the same commodity is operative in all branches of consumption. The rate of diminution may be slow for some commodities, or rapid for others, but the tendency is still present, and a point will come when further instalments of the commodity would yield no utility at all. This generalisation is known as *the law of diminishing utility*, which has been stated by Marshall in the following words.

"The additional benefit which a person derives from a given increase of a stock of a thing diminishes with every increase in the stock that he already has."

Utility, as we have seen, can only be measured indirectly

through the price that a man is willing to pay for the commodity. Stating the law in terms of prices then, we may assume that a person will be just willing to pay Rs. 16 for one pair of shoes. The sum then measures the utility of one pair of shoes to him. The second pair obviously yields less satisfaction than the first, and hence, for it he will offer less money, (say) Rs. 14. This sum measures the utility of the second pair to him. For the third pair he will, according to the same reason, lower his offer further, say to Rs. 10. Then this sum measures the utility of the third pair. In this way, as he goes on purchasing more shoes, he will offer lower and lower prices, until a point will come when he will refuse to buy any more shoes. The last pair of shoes which he is just induced to buy at a given price is known as *marginal pair*, and the utility that he derives from this pair is known as the *marginal utility*. Suppose, he will just buy three pairs of shoes and no more. Then the marginal utility of shoes, so long as he buys three pairs, is measured by Rs. 10. We may then state the law in the following way:—

Marginal unit.

"At any given time the marginal utility of any commodity to its owner decreases with every increase in the stock of that commodity."

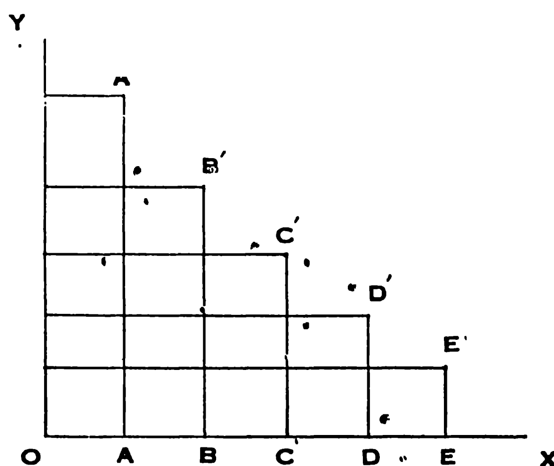


FIG. 13

The law may be graphically represented in this way. Along OX (Fig. 13), we measure the units of the commodity (shoe) and along OY we measure the price that a man is willing to pay for different pairs of shoes. For OA pair of shoes, the consumer will pay AA′ price; for AB pair, he will pay BB′ price because the utility of the AB pair will be less than that of OA pair of shoes. Similarly, for BC pair, he will pay CC′ price; for CD pair, DD′ price; the latter becoming less and less as he purchases more and more pair of shoes. A curve joining the points A′ B′ C′ D′ will represent the law of diminishing utility, and will have a negative slope.

Limitations of law : The phrase, "at any given time," points to an important qualification. If we take a certain period of time into consideration, the consumer's habits or tastes may change in the meanwhile. *Hence it is no exception to the law to say that the more good music a man hears, the greater is his desire for music; or the more a man drinks, the greater is his desire for additional drink.* For, in the meantime, the consumer's habits or tastes have been altered. We must assume a period of time suitable to each occasion. It still remains true that at any given moment, given consumer's tastes and habits as fixed, successive units will yield smaller satisfaction than they did before.

The consumer's tastes and habits must be assumed to remain unchanged.

Similarly, we must take the units to be of suitable amount. If earlier doses are very small, the marginal utility may rise at first, instead of falling. A very short holiday might not fully recuperate and soothe a man's work-worn faculties; while another holiday of double duration would yield more than double utility in soothing his nerves. *Hence we must take units to be of reasonable and adequate amounts.* These limitations are not thus *real* limitations. They merely dot the i's and cross the t's of the law.

If we take very small units, then marginal utility may increase.

There are certain groups of commodities, the marginal utility of which does not diminish with every increase in the

stock of them. The collector of curios, or stamps, may desire additional units of curio articles, or stamps with increasing intensity. But according to Viner,[1] this is no limitation, if we take a complete set as the proper unit of observation. For example, if there are known to be in existence two pearls of the same type, these two should be taken as one unit. The addition of pearls of the same type to this unit will yield diminishing utility.

In certain cases, *e.g.*, stamps, marginal utility may increase.

In some cases, the marginal utility of a commodity depends, not only on the stock that the consumer possesses, but also on the stock possessed by other people. The marginal utility of one set of telephone, for example, rises with increasing use of telephones. Similar is the case with fashion or style commodities. But there is no doubt that at any given time, given the extent of the use of the commodity, the utility of additional units to an individual diminishes. For example, if the number of telephone-users remain fixed, an additional set of telephone will yield less satisfaction to the same person than the first set.

In spite of these limitations, which are of no great importance, the tendency shows itself so widely and with so few exceptions that we can speak of it as universal. The law is important on the ground that it lies at the basis of the law of demand, and provides adequate reasons for the negative, *i.e.*, downward slope of the demand curve.

Total utility and marginal utility : Total utility is the sum of the utilities of all units possessed by a consumer. It is equal to the amount of utilities which we would lose if we were deprived of all units of the commodity. Marginal utility is the utility yielded by that unit of the commodity that a person is just induced to buy at a given price. To take the case of shoes, suppose a person buys only three pairs. Then the total utility of shoes to him is measured by (Rs. 16 + 14 + 10) or Rs. 40, while marginal utility is equal to Rs. 10.

It is marginal utility, and not total utility, that is measured by price. A person will go on buying a commodity upto the point at which its marginal utility to him will be just equal to the price that he has to pay. It is the utility of one more or one less unit of water which influences its price, and not the utility of all units of water in our possession. *It is evident, therefore, that the concept of total utility is only of the theoretical importance, while that of marginal utility is one of great practical importance.* No one knows, no one cares to know, the total utility of all units of a commodity, say tea. It never enters into one's calculations. But the concept of marginal utility enters daily into practical life. The question which every buyer of commodities asks himself is where to stop. He has to fix a margin in every purchase, and in fixing it he has to decide whether one unit more or less is or is not as desirable as the money that he will have to part with. At last he decides to stop purchasing;—he has arrived at the margin. It should be noted here that the *marginal utility is not the utility of the last unit; it is the utility of one more or one less unit of a commodity,* because physically all units are indistinguishable. Thus the utility of one pound of tea in my stock is the same as that of any other pound, including the last in the same stock. But the utility of one pound of tea in a stock of five pounds is greater, other things being equal, than the utility of one pound of tea in a stock of six or more pounds.

Price measures marginal utility, not total utility.

The marginal unit is not the *last* unit.

Importance of the margin : The price of a commodity tends to become equal to its marginal utility. As an individual goes on buying more and more units of a commodity, the utility that he desires from successive units tends to decline. He will stop at the point when the utility that he obtains from the last unit purchased is just equal to the price. This unit is known as the marginal unit, and the utility yielded by this unit thus becomes equal to the price. The concept of the marginal unit is thus of great importance in the theory of value.

It has been stated that the utility of this marginal unit *determines value*. This is a wrong statement. *Margins are never the causes of value*; rather margins, equally with value, are caused and determined by the interaction of the forces of demand and supply. Where demand and supply curves meet, they determine both value and the margin at the point of intersection. *"Marginal uses and costs do not govern value, but are governed together with value by the general relations of demand and supply."*[2]

Margin is a point *at* which, and not *by* which, value is determined.

The marginal unit does not, therefore, govern value. Of course it is true that had the marginal unit been not available the value of the commodity would have been different. But this is equally true of any other unit, since by hypothesis, all units are indistinguishable. It is not the demand for the marginal unit, nor the cost of the marginal unit that determines value. Rather *it is the total demand in equilibrium with the total supply that governs value.* Moreover, the position of the marginal unit, as *marginal unit,* is itself dependent on the entire demand in equilibrium with the entire supply. Suppose that a boat could only carry nine men and it is already full. Now, suppose a tenth man jumps into the boat and sinks it. We cannot say that it is the weight of the 10th man alone that caused the boat to sink. The correct statement will be that it is the weight of nine men *plus* that of the 10th man that caused the boat to sink. Similarly, it is not the utility of the marginal unit that governs value; but it is the demand for other units, plus the demand for the marginal unit that govern value. It is the entire demand and the entire supply that govern both the margin and the value. Margin is a point *at* which and not *by* which value is determined.

That does not, of course, mean that the marginal unit has *no* influence on value. Marginal unit, like any other unit, is a part of the total supply and hence exerts *some* influence. The absence of the marginal unit, or the marginal

[2] Marshall—*Principles of Economics,* p. 410.

buyer or seller would modify value, because the total supply or demand would then be different.

The theory of marginal analysis is, however, important on the ground that the margin is the focus at which we can best study the action of forces that determine value. The influence of forces that will cause any change in value will mostly be felt at the margin. When the price of agricultural produce falls, the marginal land, *i.e.*, the land on which the cost of production is barely covered by the price, would be the first to be thrown out. The margin is thus the centre, the focus. And so we should always go to the margin, we economists, and consider its ways.

We must go to the margin to study the forces that govern value.

AN ALTERNATE THEORY

In recent years the theory of marginal utility has been criticised by a number of writers, notably by Professors Hicks and Allen. In the first place, it has been stated that the theory of marginal utility assumes that a consumer will be able to know the utility of any particular commodity in isolation, without reference to other commodities. This is, however, not the case. The utility of a commodity to an individual is always determined with reference to a large number of other commodities. Secondly, the theory assumes that utility can be measured. The problem of measurement of the utility of a commodity involves many assumptions of doubtful validity, which are not essential to the determination of value. According to Prof. Hicks, if we study the behaviour of consumers, all that we find is that they prefer one combination of goods to another. It is not necessary for economists to do more than merely take note of this fact, without assuming anything about the utility or satisfaction of individual commodities. An approach to the theory of value along these lines would involve fewer and less complicated hypothesis than were necessary in the case of the utility theory.

The theory of marginal preferences : Let us take the case of an individual who has a certain amount of money

income which he proposes to spend on a number of goods. This individual, like most other persons, is probably accustomed to consume reasonably definite quantities of a number of commodities. He has certain habitual levels of expenditure, determined on the basis of the standard of living of his family. What he usually does is to adjust this expenditure from time to time, cutting down expenditure on some lines in order to spend more in other directions. He usually compares the modifications that are possible.

This individual usually finds that a number of alternatives are open to him. He may, for example, decide to walk a longer distance to the bus stop, and so save some money on transport, and spend it by taking his family to a cinema. Or, he may try to save some money by spending less on his dress to give some present on the occasion of his wife's birthday. All these alternatives are set against each other, and a decision is made. Once this decision is made, and the individual is found to buy less of A and more of B at some time. We conclude that he prefers B to A, without attempting the difficult task of measuring the utilities of both A and B. Thus if we find that he is spending Rs. 10 less on A and Rs. 10 more on B, we shall simply say that he prefers ten rupees' worth of B to ten rupees' worth of A.

If, after this adjustment is made, the individual does not attempt further to modify the scale of expenditure, we may conclude that after this substitution, his preference for ten rupees' worth more of both A and B is equal, and no advantage lies in further substitution of B for A. He has arrived at the margin in respect of a combination of these two commodities.

Marginal rate of substitution : In the example discussed above, we have seen that our individual, when confronted first with a choice between ten rupees' worth of A and ten rupees' worth of B, preferred B to A. In other words, ten rupees' worth of B was considered to be preferable to ten rupees' worth of A. But once this substitution was made, relative preferences changed ; and the increase in the stock of B decreased his preference for additional quantities of B while the decrease in the stock of A raised his preference for that commodity. This change in relative preferences was

such that he was no longer prepared to substitute B for A. In other words, the relative preferences for one more unit of B and A are equal at this stage, and none will be substituted for the other. When relative preferences for two commodities are thus equal, the ratio of one commodity in terms of another has been given the name of Marginal Rate of Substitution (MRS).

Marginal rate of substitution has been defined as the ratio between small units of two commodities which are equally preferred. The marginal rate of substitution of B for A is the amount of B that is equally preferred to one small unit of A. In our example, ten rupees' worth of B was equally preferred to ten rupees' worth of A. Let us suppose that the price of one unit of A is Rs. 2 and that of one unit of B is Rs. 5. In this case the individual considers 5 units of A to be equal in preference to 2 units of B. The marginal rate of substitution of B for A is, therefore, equal to

$$\frac{5 \text{ units of A}}{2 \text{ units of B}} \quad \text{or} \quad \frac{5}{2}$$

The ratio of the price of B to that of A is equal to 5/2. The marginal rate of substitution of B for A is therefore equal to the ratio of their prices, *i.e.* equal to 5/2. The marginal rate of substitution of one commodity B for another A=

$$\frac{\text{One unit of A}}{\text{That amount of B which is equally preferred to one unit of A}} = \frac{\text{Price of B}}{\text{Price of A}}$$

Diminishing marginal rate of substitution : In the theory of utility it is stated that more units of a commodity a person has, the less becomes the marginal utility of the commodity. This law of diminishing utility is replaced in this theory by the law of diminishing marginal rate of substitution. The more of B and the less of A an individual possesses, the less attractive an additional unit of B will appear in relation to the loss of one more unit of A. In other words, the marginal rate of substitution of one commodity for another decreases as an individual possesses increasing quantities of this commodity. The more units of B are substituted for A, the less will be the marginal rate of

substitution of B for A. When the marginal rate of substitution of B for A is 5/2, the individual is indifferent whether he gives up 5 units of A for 2 units of B. But once he substitutes 5 units of A for 2 units of B, he will no longer be willing to give up 5 units of A for 2 units of B. As his stock of A has declined, his preference for A increased, while that for B falls as he already has 2 units of B. The gain of 2 units of B will no longer compensate for the loss of 5 units of A. But he will probably be willing to substitute 3 units of A for 2 more units of B. At this stage he equally prefers either 2 units of B or 3 units of A ; and the marginal rate of substitution of B for A will be 3/2. In other words, the marginal rate of substitution of one commodity for another diminishes as a person has more of this commodity and less of the second.

One advantage of this method is that it is more realistic than the theory of marginal utility. Unlike the latter theory, it does not state that the demand for a commodity B depends on the desire of the consumers for that commodity alone. On the other hand, it expressly recognises the fact that the demand for a commodity depends, not only on the desire of the consumers for that commodity, but also on their desires for all other commodities which they purchase or intend to purchase with their money.

A note on the doctrine of consumer's surplus : The doctrine of consumer's surplus is a deduction from the law of diminishing utility. The price that we pay for a thing measures only the marginal utility, but not the total utility. Only on the marginal unit, which a man is just induced to buy, the price is exactly equal to the satisfaction that he expects to get from that unit. But on other units that he buys, he enjoys some extra amount of satisfaction. He would be willing to pay higher prices for these units than what he actually pays for them. The difference between the amount of satisfaction which a consumer obtains from purchasing things over that which he foregoes by paying money for them is the economic measure of consumer's surplus. It represents the excess of satisfaction that he secures, the excess being equal to the difference between the

It is deduced from the theory of diminishing utility.

utility of the goods acquired and that of the goods sacrificed. Had he been deprived of the commodity, he would then have been forced to spend the money on the purchase of other commodities from which he does not derive the same amount of satisfaction as before.

In order to give definiteness to our ideas, let us take up the example of shoes given before. As we have stated already, from the first pair of shoes, a man expects to get satisfaction worth at least Rs. 6 ; from the second, he expects *additional* satisfaction worth Rs. 5. From the third, he expects *additional* satisfaction worth Rs. 4. Suppose he is just induced to buy three pairs and no more. Since in a market, there cannot be more than one price, the price that he pays for each pair is measured by that of the marginal pair *i.e.*, by Rs. 4. He will pay (4 × 3) or Rs. 12 in all for the three pairs. But by hypothesis, he is enjoying from the three pairs an amount of satisfaction worth (Rs. 6 + Rs. 5 + Rs. 4) = Rs. 15. Hence he enjoys a surplus of satisfaction from his purchase worth (Rs. 15 − Rs. 12) = Rs. 3. *Consumer's surplus is then measured by the difference between the total utility and the marginal utility multiplied by the number of units purchased.*

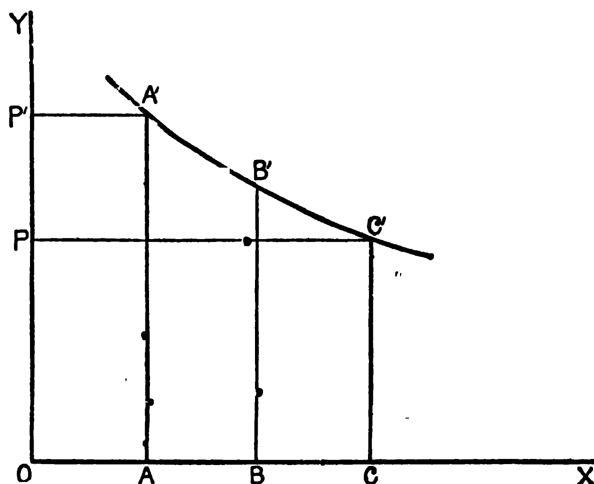


FIG. 14

Fig. 14. illustrates the amount of consumer's surplus that an individual obtains from the consumption of a commodity.

In fig. 14. price or utility is measured along OY, and the quantity is measured along OX. For OA amount of a commodity, an individual is willing to pay AA′, *i.e.*, he expects to get at least OAA′P′ amount of satisfaction. Otherwise he will not pay a price equal to AA′. For AB amount, he will pay a price equal to BB′. That shows that he expects to derive ABB′A′ amount of satisfaction from AB units. For the BC unit, he will pay CC′ price which means that he expects to get from it satisfaction equal to the area BCCB′. Supposing he purchases these three units, OA, AB and BC at the price CC′, the aggregate sum of money that he spends is measured by the area OCC′P (*i.e.*, OC′ × CC′). Hence the consumer derives from the purchase of OA, AB and BC units surplus satisfaction measured by the area PC′A′P′.

The amount of surplus satisfaction depends, in the words of Marshall, on our *opportunities*, or conjuncture. In modern societies, many articles are produced with great ease and with low cost, and hence sold at very low prices, whereas the satisfaction that we get from them is often very great. But in the less developed communities, the satisfaction that we would get from a commodity would seldom exceed the dissatisfaction or the disutility of producing it.

Difficulties of measuring consumer's surplus : Certain difficulties have to be faced in measuring consumer's surplus in terms of money. It must be assumed that the spending of more or less money does not affect the marginal utility of money, or if it affects at all, must affect it in such a slight manner that it can be ignored. This assumption is justified only when the expenditure on any particular commodity forms only a very small part of the total income. But when we have to consider the case of commodities, the expenditure on which forms a substantial part of the total income, the increase or decrease of expenditure will alter the marginal utility of money and thus vitiate our conclusions.

We must assume the marginal utility of money to be unchanged throughout.

This difficulty is real, and limits the utility of the doctrine. Marshall's reply to this criticism was that this difficulty was present in all economic problems, and so was

not special in the case of this doctrine. J. R. Hicks[1] has suggested a solution for this difficulty. According to him, the best way of looking at the problem is to conceive of consumer's surplus in the nature of a gain in money income caused by the fall in the price of a commodity. Suppose a person will buy 4 pairs of oranges at 10 pice a pair, and if the price falls to 6 pice, he may decide to purchase only 4 pairs of oranges at 6 pice per pair, and his money income will then have increased by 4 as. which he may spend on other commodities. Most probably with the relative change in prices, he may decide to buy more oranges, and less of other commodities, and so make himself better off. In any case, we can conclude that the consumer's surplus that he derives from the fall in the price of oranges will not be less than 4 as.

Another difficulty arises when the aggregate consumer's surplus in a market from the consumption of a particular commodity is to be measured in terms of money. For in a market composed of different classes of people, some of whom are rich and others are poor, the spending of a rupee means greater sacrifice to the poor than to the rich. Moreover, even if all persons possessed equal incomes, the tastes or sensibilities of different persons would vary. One person may desire a thing with greater intensity than another and hence he may be willing to offer a higher price for that thing; or alternately, even after paying the same price as the other person, his satisfaction will evidently be greater. But these difficulties do not put an insurmountable obstacle in the way of measuring the consumer's surplus in a market. For, when we consider the case of a large number of people, the law of averages comes into operation. The high sensibility or wealth of a few persons for a thing will be balanced by the low sensibility or poverty of others so that on average, such differences of tastes or incomes may be neglected.

Differences of wealth.

Differences in sensibilities.

Some economists, like Patten, have argued that as a person goes on purchasing more and more units of a

[1] *Value and Capital*, pp. 38-41.

commodity, the intensity of his desire for earlier units diminishes. In other words, as he increases his purchases, his demand prices for earlier units fall, along with his satisfaction from their consumption. So our measurement of consumer's surplus would be inaccurate. To take our example of shoes, as the person goes on buying shoes, his satisfaction from the first pair diminishes, and is much less than Rs. 6 when he buys the third pair. But "it is highly improbable that a *slight change* in the consumption of anything would have an appreciable influence upon the utility of the earlier increments, because a considerable change in consumption is necessary to make us aware that any change in 'commonness' has taken place".[2] Moreover, this misconceives the method of determining the lists of demand-prices. The objection would have been valid, if the list of demand-prices indicated the average utility of the units. In our example, the utility of the first pair of shoes is Rs. 6. When he buys the second pair at Rs. 5, the average utility of the two pairs will be Rs. 5/8. When he buys the third pair at Rs. 4, the average utility of a pair falls to Rs. 5. Hence if our demand curve measured only average utility, then as a man went on buying more and more of a thing, the average utility of the earlier units would have fallen. But the list of demand-prices indicates *additional* utility of additional units. The utility of the second pair is the utility that a person gets *in addition* to the utility of the first pair of shoes. And this utility is measured by Rs. 5. In that case, subsequent purchases would not affect the utility of earlier purchases. And so the objection is not valid.

As one buys more and more units, the utility of earlier units decreases.

Another difficulty is that we cannot draw the earlier portions of the demand curve which are purely hypothetical. We ourselves do not know how much money we would offer, if we are threatened with the almost complete loss of a commodity. For example, we cannot know, except by mere guess-work, what a person will be willing to offer

We do not know the full demand schedule.

[2] Pigou, "Some remarks on utility" in the *Economic Journal*, 1903, page 65.

for one pair of shoes, had it been known that there is only one pair of shoes in existence. Hence the demand-price of a commodity is a mere guess-work except in the neighbourhood of customary prices. But this is a mere *theoretical* difficulty, and not a very serious one. For, the practical applications of the doctrine are concerned more with the reactions on the amounts of satisfaction consequent on changes in prices in the neighbourhood of customary prices, than with hypothetical scarcity prices. What we want to measure in the changes in the aggregate consumer's surplus made by small changes in prices (*e.g.*, in problems of taxation). And for this purpose, our list of demand-prices, though defective, is fully sufficient.

Difficulties owing to the presence of substitutes.

Some difficulty is introduced in the measurement of consumer's surplus, owing to the presence of substitutes, or complementary goods. Tea and coffee are often taken as the typical example of substitutes. If tea could not be had at all, people would take to coffee. Their loss of satisfaction owing to the absence of tea would be substantial no doubt, but if both tea and coffee were absent, their loss would be far greater, for in that case, they would have no coffee to fall back upon. Thus the total utility of both tea and coffee is greater than that of tea *plus* that of coffee determined on the supposition that when one is absent the other is present. Hence even if we add together the total utility obtained from both tea and coffee, that would not measure the total amount of satisfaction from their consumption. To meet this difficulty, Marshall suggests that in these cases, we should consider both tea and coffee as *one* commodity; and group the goods, which are substitutes, under one common demand schedule.

The consumer's surplus from necessaries is often negative and indefinite.

To determine the total utility of a commodity, which is one of the necessaries of life, is a very difficult task. Often the satisfaction from their consumption is negative. That is, we do not actually feel any positive satisfaction from them. But we would seriously miss their loss. Rather than be deprived of them, we would offer everything we possess. The consumer's surplus is thus often indefinite.

This is true, not only of necessaries of life, but *also of conventional necessaries.* In order to meet this difficulty, we may adopt the suggestion of Patten, and distinguish between a "pain economy" and a "pleasure economy." The first is the stage when a person consumes only the absolute necessaries to support life, "to prevent hunger, thirst, freezing; to ward off pain, not to yield satisfaction." The second stage begins after the first, when a person has got more than enough to support life, when positive satisfaction begins. Consumer's surplus can be measured only in the second stage.

Consumer's surplus of articles possessing prestige value is indefinite.

Similarly, with regard to commodities which satisfy primarily the desire for distinction, the total consumer's surplus is often indefinite. These things (*e.g.*, diamonds) possess prestige value. And the satisfaction from such articles would decrease materially, if their price falls from the high level. For example, if the price of diamonds falls from the present level, its high utility to the present users would vanish. Hence in the case of such articles, a fall of prices will not always increase the amount of consumer's surplus.

The doctrine is hypothetical, and unreal.

Prof. Nicholson has cast serious doubts on the utility of the whole doctrine. "Of what avail is it to say that the utility of an income of (say) £100 a year is worth (say) £1,000 a year?" According to him, the doctrine is purely hypothetical and arbitrary. This is not correct. The doctrine points out the very important benefits that we derive from our economic environment, if we compare the conditions *now* with those of some *past* period, or the conditions of one country with those of another. For, as Marshall points out, the question would be of some avail if we compare the conditions in Central Africa and London. There are many things, many amenities of life, which are available in London, but not in Central Africa. Hence we can say that a person with an income of £1,000 in Central Africa is almost as much well off as a similar person with £100 in London. Moreover, it must be pointed out that ordinarily we do not want to measure the total utility of

income, but we want to know the amount of changes in consumer's surplus due to small fluctuations in prices. And for this purpose "the engine which he (Marshall) has devised, though limited in range, can therefore often serve us."[3]

Though the exact measurement of consumer's surplus is not always possible, the doctrine is, however, not fanciful. It is neither hypothetical, nor unreal, because it is a generalisation from our ordinary ideas. "Though that surplus may not be clear at the lower end of the scale of consumption, where bare necessaries alone are bought, or at the upper end, where mere vanity is satisfied, it is unmistakable in regard to what may be called the true enjoyments of life."

Theoretical and practical utility of the doctrine : The concept of consumer's surplus was first introduced by Marshall, "to put familiar language in a firm compact shape, ready to serve as the basis for further study." The doctrine points out the important fact that the price of a commodity does not always *indicate* the exact amount of satisfaction derived from it. It provides a satisfactory explanation of the fact that for many commodities of ordinary use, like salt etc., the value-in-use and the value-in-exchange differ, and it provides a tool for a somewhat rough measurement of this difference.

It measures the differences between value-in-use and value-in-exchange.

Secondly, it enables us to compare the amount of real income, or the flow of utilities that a member of one country enjoys in relation to that of the members of another country ; that he enjoys during the present period in relation to some past period.

It enables us to compare conditions of different periods.

Thirdly, it may be of some importance to the monopolist. He may fix the price of his articles so high as to leave no consumer's surplus to any customer. But in that case, he may have to fear the opposition of the consumers, or public intervention. So with a view to safeguard his monopoly, he may lower his prices so as to leave a certain amount of consumer's surplus.

It is of great importance in problems of the theory of monopoly.

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[3] Pigou, "Some remarks on utility" in the *Economic Journal*, 1903, p. 66.

He will be prompted to do it the more so, if he is actuated by the regard for public welfare, or for extending his future business. Present low prices, by making people familiar with the use of his article, would ultimately lead to an increase of demand, and hence to increased profits.

It helps us to measure the gain from international trade.

Fourthly, as Marshall points out, gains from international trade may be measured in terms of an increase of consumer's surplus obtained by the inhabitants of countries trading with each other. *Fifthly, the doctrine is of special importance in problems of taxation.* It may be of service to the Finance Minister in deciding how much injury would be done to the consumer's surplus by an additional tax of a few annas per maund on salt, or on sugar. If the commodity is one, whose production obeys the law of increasing returns, the price of the article would be raised by *more* than the amount of the tax; whereas, if it obeys the law of diminishing returns, the price would be raised by *less* than the amount of the tax. Hence the loss of consumer's surplus would be larger in the first case than in the second case. *Prima facie,* other things being equal, a tax on the second type of commodities is to be preferred to that on the first. The opposite happens in the case of bounties. Thus interlaced with many intricate problems of economic theory, the doctrine of consumer's surplus remains a very serviceable engine for the discovery of concrete truth.

It enables us to measure the effect of changes of taxes on commodities.

CHAPTER XIII

ON INDIFFERENCE CURVES

The theory of value whose basis is the concept of utility has been criticised in recent times. The Marshallian utility analysis, it is argued, proceeds on the basis that there is only one commodity which the individual consumer will buy at a time, and our task is to measure the utilities of the different units of this commodity. This assumption is not realistic in the theory of consumption, because consumers are usually interested in a combination of related goods. Moreover, this analysis assumes that utilities of different commodities can be measured. This is difficult, if not impossible. It is, therefore, better to have an analysis which avoids these difficulties. The indifference curve analysis seeks to achieve this objective. The indifference curve, a geometrical device, was stated by Edgeworth in his book, *Mathematical Psychics,* and was later developed by Pareto.

The analysis starts with the assumption that an individual consumer can substitute one commodity for another. This is more or less true with regard to the vast majority of commodities. If it is possible to substitute one commodity A (say, a piece of *dhoti*) for another B (say, a shirt), a consumer can then find several combinations of these two commodities which are equally preferred by him. For example, he may consider 12 units of dhoties plus 2 units of shirts to be equally preferable to another combination of 11 units of dhotis plus 3 units of shirts. It is possible to prepare a list of such preferences.

12 units of dhotis plus 2 units of shirts.
11 units of dhotis plus 3 units of shirts.
10 units of dhotis plus 5 units of shirts.
9 units of dhotis plus 8 units of shirts.
etc., etc., etc.

Let us measure units of dhotis along OX and units of shirts along OY. We can then draw up a curve joining these points.

The curve I represents a particular scale of preferences for dhotis and shirts on the part of a consumer. Take two points N and M on the curve. The individual will prefer a combination of OB dhoti plus OB_1 shirts equally with another combination of OA dhotis plus OA_1 shirts. Each set of the two commodities is equally preferable to him, and he is indifferent as to which combination of dhotis and shirts he buys, provided that the points lie on the same curve. This curve is called the indifference curve. This curve has a negative slope on account of the fact that as the quantity of a commodity increases, that of another must decrease. Otherwise the combination will not be equally preferable. A consumer may equally prefer a combination of 10 units of dhotis plus 5 units of shirts, or a combination of 9 units of dhotis plus 8 units of shirts. But his preference for a combination of 10 units of dhotis plus 5

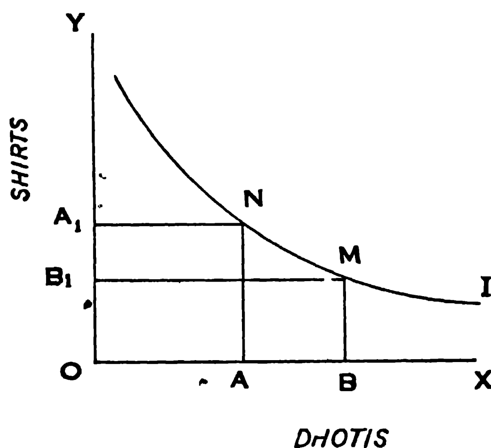


FIG. 15

units of shirts must be less than his preference for another combination of 10 units of dhotis plus 6 units of shirts. The slope of the curve will be determined by what has been called the *marginal rate of substitution* of one commodity for another. The marginal rate of substitution of

shirts for dhotis is equal to the units of shirts necessary to offset the loss of the marginal unit of dhoti. This rate increases as the number of shirts in the possession of the consumer increases. In our example, when the consumer possesses 12 units of dhotis and 2 units of shirts, then one more unit of shirts will be a substitute for one unit of dhoti. But when he possesses 11 units of dhotis plus 3 units of shirts, he will demand 2 units of shirts to compensate him for the loss of one more unit of dhoti. In other words, the more of shirts and the less of dhotis a consumer possesses, the less will he prefer an additional unit of shirts to another unit of dhotis. This follows from the law of diminishing utility which, in its new form in this analysis, is known as the law of diminishing marginal substitutability.

Each indifference curve, therefore, represents the different combinations of two commodities that a consumer will prefer equally. Given the different scales of preferences of the consumer, we can draw up any number of indifference curves.

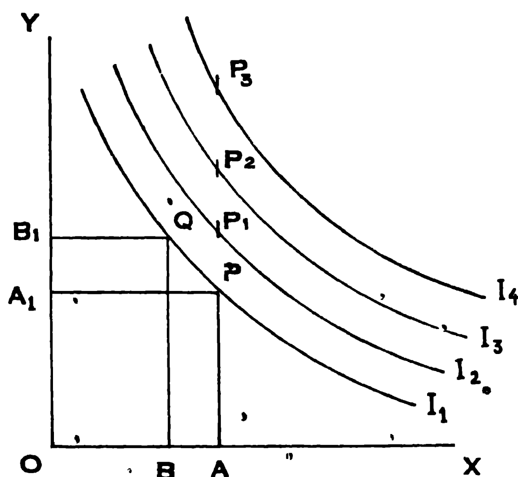


FIG. 16

If two points, P and Q, are on the same indifference curve, it shows that the consumer will prefer a combination of OA units of dhotis plus OA_1 units of shirts equally with

another combination of OB units of dhotis plus OB_1 units of shirts. But if two points, P and P_1, are on two different curves, the consumer will prefer any combination on the curve I_2 to a combination on the curve I_1; any combination on the curve I_3 to another combination on the curve I_2 and so on.

The indifference curve analysis is a powerful tool. A great merit of this analysis is that it does not have to assume that utility can be measured in quantitative terms. All that is necessary is to make the assumption that the total utility of two combinations of two commodities on the same curve is the same. Hence we can solve many of our difficulties with its help. We can, for example, determine the demand curve in this way. Let us assume that an individual has a certain income (say, Rs. 50) which he will spend on two commodities, dhotis and shirts. Prices of these are fixed for

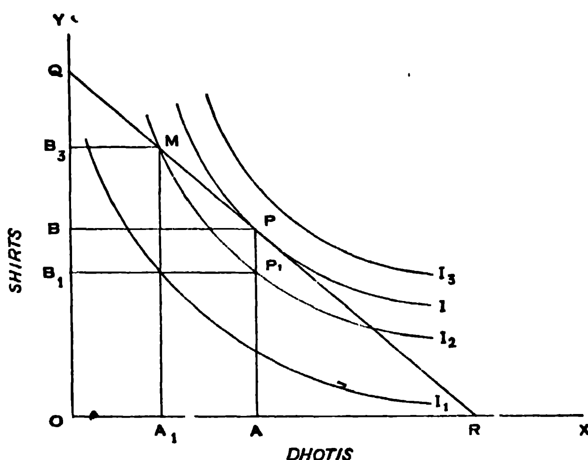


FIG. 17

the consumer, and will not be affected by his purchases, (which is the usual fact in the consumer market). We measure units of dhotis along the OX axis and units of shirts along OY. When the consumer may spend the entire sum on dhotis, he will buy OR units of dhotis. This is found out by dividing the sum (Rs. 50) to be spent by the price (P) of dhotis. If he spends the entire sum on shirts, he will buy

OQ units of shirts. If Q and R are connected by a straight line, this line QR will represent possible combinations of dhotis and shirts that the consumer will buy with Rs. 50 at different prices of these commodities. The line is called the *price line*. The slope of the price line is $\frac{OQ}{OR}$. Now

$$\frac{OQ}{OR} = \frac{\dfrac{\text{Income}}{\text{Price of shirts } P_1}}{\dfrac{\text{Income}}{\text{Price of dhotis } P}} = \frac{P}{P_1}.$$ So the slope of this line represents relative prices of dhotis and shirts.

Let us next draw up a series of indifference curves I_1, I_2, I, I_3, showing the different scales of preferences of a consumer. Two of these curves intersect the price line at two points, the third curve I touches the price line at P and the fourth curve I_3 is well above the price line. The point P where the curve I touches the price line RQ will yield the most preferable combination. This is obvious from fig. 17. Any combination on the lower indifference curves I_1 and I_2 must be less preferred than that on the higher indifference curve I. From indifference curve I_2, we find that the consumer will give equal preference to a combination of OA units of dhotis plus P_1A units of shirts, or to that of OA_1 dhotis plus MA_1 shirts. But he will certainly prefer a combination of OA units of dhotis plus PA units of shirts to that of OA units of dhotis plus P_1A units of shirts. Hence any combination on the higher indifference curve I will be preferred more than any other combination on the lower indifference curves I_1 and I_2. It is of course true that any point on the highest indifference curve I_3 will yield a more preferred combination than one on the curve I. But given the individual's income fixed at Rs. 50, his income will be insufficient to buy a combination of commodities on the highest curve, I_3. The point P on the indifference curve I, therefore, yields the most preferred combination, given the fixed money income of the consumer, who will spend Rs. 50 on buying OA units of dhotis and PA units of shirts.

When the price of dhotis rises, the consumer will be able to purchase smaller quantities of dhotis with the same money income. As the price of shirts remains the same, OQ. the

units of shirts to be purchased with the entire income remain the same. But the units of dhotis purchased will fall down from OR to OR_1. The new price line will be QR_1.

This line will be touched by another, a lower indifference curve, at P_1, and the consumer will now purchase OA_1 units of dhotis plus P_1A_1 units of shirts, instead of OA units of

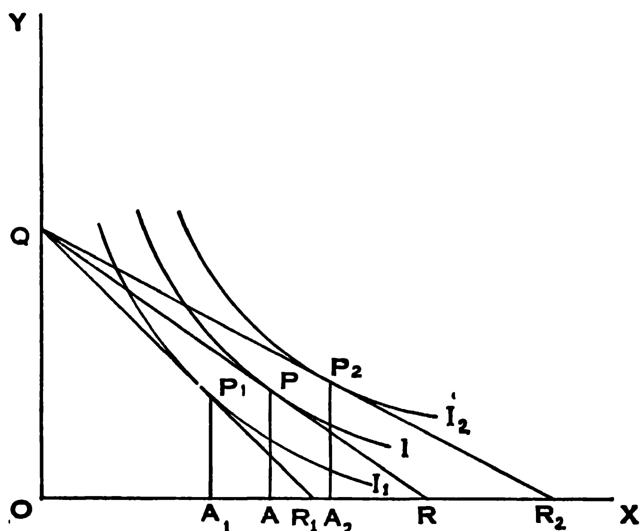


FIG. 18

dhotis plus PA units of shirts. If the price of dhotis falls, the consumer can purchase larger units of dhotis (*i.e.*, larger than OR), so that the new price line will be QR_2, and a higher indifference curve touches this line at P_2 so that the individual will now purchase OA_2 units of dhotis plus P_2A_2 units of shirts. If the price line is allowed to take on all possible positions consequent on changes in the price of dhotis, all these points, when joined together, will determine the demand curve for dhotis relative to the price of shirts.

Let us also derive another curve showing different combinations of the two commodities that a consumer will buy if his money income changes. This is shown in figure 19.

When the money income is equal to Rs. 50, the price line is QR as before and the point P at which the indiffer-

ence curve I touches the line QR shows the best possible combinations of dhotis and shirts, given the same income and prices of both. If the money income rises to (say) Rs. 75, while prices remain the same as before, the consumer can now buy OR_1 units of dhotis (instead of OR) or OQ_1 units of shirts (instead of OQ units). The new price line Q_1R_1 is touched by a higher indifference curve I_1 at P_1. The consumer will then move on to P_1, the new equilibrium position, where he will buy OA_1 units of dhotis plus P_1A_1 units of shirts. The line joining the points PP_1 will show how consumption will change with changing incomes if prices remain unchanged.

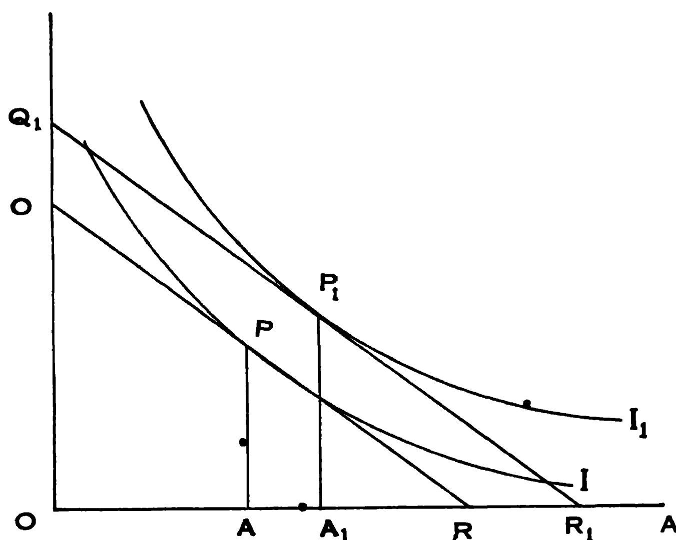


FIG. 19

This curve can be combined with the curves in fig. 18 to exhibit the effect of changes in the price of a commodity on its sale. When the price of dhotis falls from the original position, the consumer will usually purchase larger quantities of dhotis.* This takes place in two ways. A fall in the price of a commodity is tantamount to a rise in money incomes, so that the new price line moves from QR to Q_1R_1, and the consumer moves to a higher indifference curve I_1,

which touches the price line Q_1R_1 at P_1. This is what is called "the income effect." Secondly, the fall in the price of dhotis relatively to that of shirts will induce the consumer to substitute dhotis for shirts. This is called the "substitution effect." The consumer will then move from P_1 to P_2 at which the indifference curve touches the price line QR_2.

We have stated that when income rises, a consumer will purchase larger quantities of both the commodities. But in some cases, the consumer may buy less of a commodity as his income rises. These are called "inferior" articles, which are largely consumed at low levels of income, but are replaced by other goods or goods of better quality when a man gets richer.

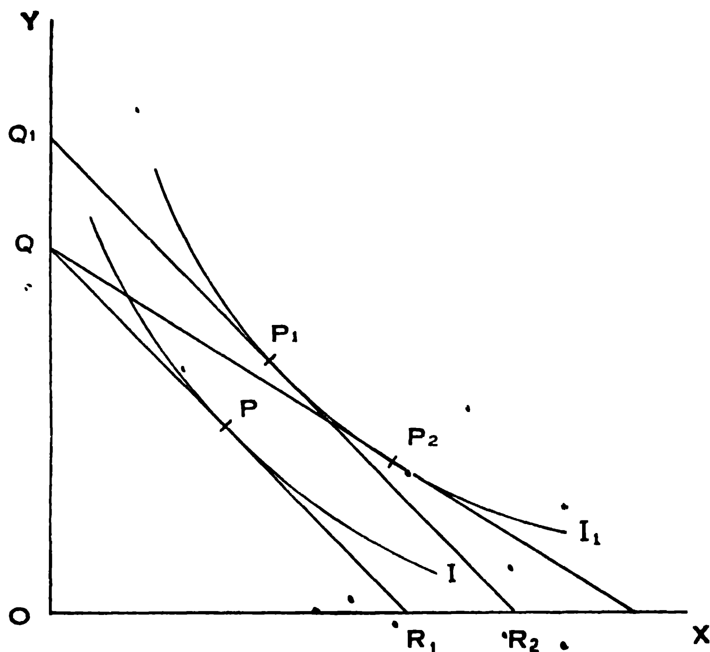


FIG. 20

So far we have discussed the concept of the indifference curves on the basis of two commodities. The analysis may easily be applied when three commodities are purchased by the consumer. We would then need three dimensions

to represent the relative preferences. We can draw indifference surfaces, whose shape will be something "like saucers resting on the three sides of the corner of a box." If, however, prices of a number of commodities change in the same proportion, that group of commodities can be taken to be like a single commodity. Indeed we may define a commodity as a class of goods whose prices change proportionately.[3] Hence if relative wage rates for different groups of labour change proportionately, it will do no harm if labour is taken to be one commodity.

We can also draw up a market demand curve. The demand for a commodity in a market is the sumtotal of the demand of a group of individuals, and as such it has almost the same properties as individual demand curves. Certain peculiarities should, however, be noted. If the price of a commodity changes, there will, we know, be two effects on its demand,—a substitution effect and an income effect. Each individual will tend to substitute dhotis for shirts when the price of the former falls. This substitution effect is likely to be the same in the case of all individuals. So the group substitution effect will be the same as the individual effect. But we cannot make this assumption with regard to the income effect. A commodity may be regarded as "inferior" by a section of individuals in the market, while others may regard it as "normal". In other words, the first group of people will buy less of it, while the second group will usually buy more. So we cannot be sure about the income effect in a market. But, if the people who buy in the market spend a small proportion of their income on the commodity, the income effect may be assumed to be negligible. So the market demand curve for a commodity will slope downwards in all cases where the commodity is not definitely an inferior good to the majority of the people. In general, the substitution effect will be dominant, and some negative income effect (as in the case of inferior goods) may be more than counter-balanced by a large substitution effect.

[3] Hicks. *Value and Capital*, p. 33-4.

CHAPTER XIV

CONDITIONS OF SUPPLY AND COST OF PRODUCTION

Elasticity of Supply : As in the case of demand, we must also take account of the elasticity of supply of a commodity. Elasticity of supply means the rate at which the amount of a commodity offered for sale will change as a result of a change in price. The supply of different commodities responds differently to every change in price. When the supply of a commodity changes by a large percentage as the price changes a little, it is said to be elastic. The supply will be inelastic when a small rise or fall in price will not lead to any substantial change in supply.

Factors determining elasticity of supply.

What factors determine the elasticity of supply? It will depend on the nature of the commodity, *i.e.*, whether it is durable or perishable. Perishable articles like milk or fish or fresh vegetables are inelastic in supply over short periods, for these must be sold before they get rotten. The supply of labour is also inelastic in this sense over short periods as labour is an extremely perishable commodity. The supply of durable articles may, however, be kept back if the price is considered low. Hence their supply is elastic over short periods. Secondly, the supply of a commodity will be inelastic if the additional output can only be produced at a considerably higher cost than before. In that case, a small rise in price may be insufficient to cover the increased cost of producing the additional output. The supply may not increase materially in that case. This is usually true of agricultural and extractive industries where the law of diminishing returns is in operation. Provided that no change in technique takes place, the supply of these articles is usually inelastic. Thirdly, the supply of manufactured articles may be elastic during short periods upto the limit fixed by the maximum capacity of the

existing fixed plants. But after the maximum capacity is reached, the supply may not respond to a small rise in price. The more complicated the instruments of production and the more specialised the skilled labour required to produce a commodity, the greater will be the inelasticity of its supply. But the supply of such commodities may be elastic over fairly long periods when it will be possible to install new instruments of production. Fourthly, the supply of a commodity will be highly elastic if it is produced under conditions of increasing returns. If the demand for these commodities rises, and so the price goes up, producers will gain very high profits as larger output will mean lower costs. It should be noted that under conditions of increasing returns, the supply may be inelastic when the price is falling. For producers may try to maintain the same output, knowing that any reduction in output will lead to higher costs. Lastly, the supply of a commodity will depend to some extent on the technical conditions of production. If the process of production is simple, requiring little fixed capital, the supply can be readily adjusted to every change in demand so that the effects of a crisis are not as severe as in highly equipped industries. But if the production of the commodity calls for highly specialised equipment, the supply cannot be readily adjusted to demand.

Costs of production : One of the important factors determining the elasticity of supply is the way costs of production would change when a larger or a smaller output is being produced. How much of a commodity an individual firm will produce depends on the amount which it costs to produce, and on the relation of this cost of production to the rate of output.

What is meant by cost of production? When a firm decides to produce a commodity, it has to incur certain costs, *i.e.*, money expenses on the installation of plant and machinery, on the purchase of raw materials, on the payment of wages, etc. It is the total money outlay that entrepreneurs have to meet in order to attract different factors of production into their businesses. It includes (*a*) the prices of raw materials, (*b*) wages and salaries, (*c*) interest payments on capital invested in the business,

(*d*) rent on buildings, (*e*) depreciation on account of the wear and tear of the building, machinery and other capital goods, (*f*) the normal earnings of management, (*g*) other trade expenses (*e.g.*, marketing, advertising expenses, etc.) and (*h*) payments of taxes, etec. Cost of production includes not only payments made for goods and services bought and paid for, but also the *imputed value* of goods and services or of productive factors, which a firm uses but does not directly pay for. Thus it should include the imputed but unpaid wages of the owner-manager, estimated rent on the land containing the factory, owned by the entrepreneur himself and interest at current rates on all capital invested by the entrepreneur in his own business.

Variable (or prime) and fixed (or supplementary) costs : If we inspect these various cost elements, we shall see that some of them will vary with the output, while others will remain the same, whatever the scale of output. The former are called variable or prime costs, while the latter are known as fixed or supplementary costs.[1]

Variable costs include those items of expenditure which change when output is changed. As a larger output is produced, more raw materials are required, and possibly more labour has to be employed. These costs are assumed to cease when output is zero.

Fixed or Supplementary costs include those items of cost that do not change as more or less output is produced. They are the costs which a firm has to incur even when the output is zero, *i.e.*, when the firm ceases to produce anything temporarily. These are better described in business language as "overhead costs". The usual practice is to include rents, interest on long-term debts, allowance for depreciation, salaries and wages of chief officers and the maintenance staff, etc., in fixed costs, and to regard variable costs as consisting of wages, costs of raw materials, part of the cost of power and light, etc.

The distinction between these two types of costs is a matter of degree. It depends partly on the policy of the

[1] The terms, prime and supplementary costs, were adopted by Professor Marshall.

firm, and partly on the period of time under consideration. If, for example, all labour is hired by a firm under five-year contracts, wage payments would continue whether the firm produces any output or not. Wages would then be classed as fixed costs. Secondly, the distinction is only valid in the short period of time. If a sufficiently long period of time is taken into consideration, all costs would become variable or prime costs. Over such a long period, a firm will not only adapt its labour force and its use of raw materials to the level of output, but it will also change the size of its plant and other equipment, or the size of its permanent managerial staff in accordance with expected changes in output. Thus in the long period all costs are variable with output.

Average fixed cost and average variable cost : This is found out by dividing the total fixed cost and the total variable cost by the total output. In this way we can find out the average fixed cost and the average variable cost per unit of output. The distinction is important in the analysis of the relation of the average total cost to output.

As the output of a firm increases, the average fixed cost will tend to decline continually. This is obvious from the definition of fixed costs, which are costs that do not vary with output. Suppose that the total fixed costs of a firm at

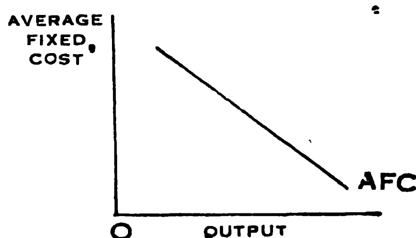


FIG. 21

zero output are Rs. 1,000. Whether the firm produces 100 or 200 units, the fixed costs remain the same, *i.e.*, Rs. 1,000. When the total output is 100, the average fixed cost will be (Rs. 1,000 ÷ 100) Rs. 10; when it is 200, the average fixed cost will be Rs. 5.

The average variable costs (determined by dividing total variable costs by output) will at first decline with increasing output at low levels of output. A firm is usually organised to produce a certain output. When production is considerably less than this output, average variable costs will increase at a slower rate as output expands than the rate of increase in output. If output increases by 10 per cent, average variable costs (AVC) may increase by (say) 5 per cent. In other words, below this critical output, average variable costs will tend to decline as output increases.

The most obvious explanation of this is the fact that at such low levels of output, labour may not be used to anything like full capacity. So as the output expands, the same labour force may be in a position to cope with increased production. But once the output tends to reach the capacity of the plaint, average variable costs will increase at a faster rate than output. The firm will probably have to use less efficient machinery or less efficient labour. Hence average variable costs will tend to rise once the capacity output is reached. This is represented by a flat U-shaped curve.

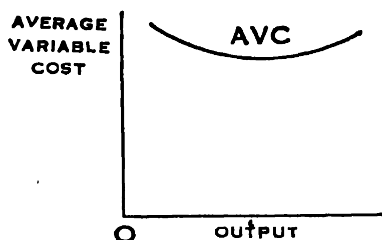


FIG. 22

Average total cost : This is found out by dividing the total costs by the total output. Since total costs consist of both fixed and variable costs, average total cost will be equal to the sumtotal of average fixed cost and the average variable cost. In other words.'

ATC = AFC + AVC.

What is the relation between the average total cost to output? We know that the AFC continuously declines as

output increases, while AVC at first declines, and then after a certain output, begins to rise. So average total costs will fall as output increases from zero until the average variable costs begin to rise. Even then average total costs may continue falling if the rate of decline in the average fixed costs is more than the rate of increase in the average variable costs. Eventually, as output increases, the rise in the average variable costs will more than counterbalance the fall in the average fixed costs. The average total costs will then rise, at first slowly, and then after a certain point, rapidly.

All this is illustrated in the following table.

Short-period Costs and Output

Output	*Total fixed cost*	*Total variable cost*	*Average fixed cost*	*Average variable cost*	*Average Total cost*	*Marginal cost*
1	Rs. 10	Rs. 2	Rs. 10	Rs. 2	Rs. 12	
2	Rs. 10	Rs. 3·8	Rs. 5	Rs. 1·9	Rs. 6·9	Rs. 1·8
3	Rs. 10	Rs. 5·3	Rs. 3·3	Rs. 1·8	Rs. 5·1	Rs. 1·5
4	Rs. 10	Rs. 6·4	Rs. 2·5	Rs. 1·6	Rs. 4·1	Rs. 1·1
5	Rs. 10	Rs. 7·5	Rs. 2·0	Rs. 1·5	Rs. 3·5	Rs. 1·1
6	Rs. 10	Rs. 9·6	Rs. 1·6	Rs. 1·6	Rs. 3·2	Rs. 2·1
7	Rs. 10	Rs. 12·8	Rs. 1·4	Rs. 1·8	Rs. 3·2	Rs. 3·2
8	Rs. 10	Rs. 17·2	Rs. 1·2	Rs. 2·1	Rs. 3·4	Rs. 4·4
9	Rs. 10	Rs. 23·3	Rs. 1·1	Rs. 2·6	Rs. 3·7	Rs. 6·1
10	Rs. 10	Rs. 30·0	Rs. 1·0	Rs. 3·0	Rs. 4·0	Rs. 6·7

Marginal cost : Marginal cost is the change in total costs that results for an increase of output by one unit. If the total cost of producing 2 units is Rs. 13·8, and that for producing 3 units is Rs. 15·3, then the marginal cost of the third unit is equal to Rs. 1·5. It measures the change in total costs, not in either average total costs, or the average fixed costs. Since by definition, fixed costs do not increase when one more unit is produced, marginal cost consists only of variable costs. But it is different from the average

variable costs as will be evident from the table on page 171. The marginal cost of the 3rd unit is Rs. 1·5, while the average variable cost of the 3rd unit is Rs. 1·8. Average variable cost is found by dividing the total variable costs by the total output, while marginal cost is equal to the increase in the total variable costs that results from producing one more unit of output.

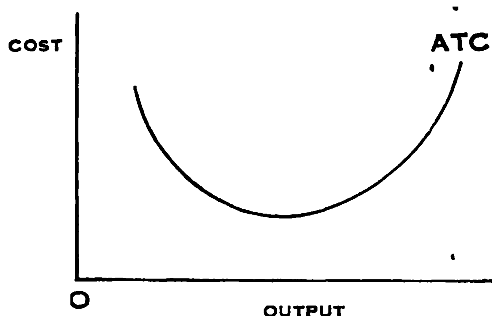


FIG. 23

Relation between average and marginal cost : From table on page 171 it is evident that upto the 6th unit, marginal cost is less than the average total cost, and from the 8th unit, marginal cost is higher than the average total cost. The average total cost is also falling upto the 7th unit, and then it rises continually. Thus average cost will continue to fall as output increases so long as the marginal cost is less than the average total cost; and the latter will rise with increasing output when the marginal cost is higher than the average total cost. This is illustrated in the following graph. So long as the average total cost curve is sloping downward to the right, the marginal cost curve must lie below the former. From the point from which the average total cost curve begins to rise, the marginal cost curve would lie above it. The two curves intersect at a point which is the lowest point on the average total cost curve.

Certain statements may be made about the relation between the average total costs and marginal costs. When the marginal cost is higher than average total costs, the latter will be rising. Conversely, when the marginal cost is

less than the average cost, the latter is falling. When the marginal cost is equal to the average cost, the average total cost is at its minimum.

What are the ultimate costs to which money costs correspond?

Real cost and opportunity cost : We have so long been discussing the money costs of production. Economists have tried to probe behind the money cost. Utility or the preferences of consumers lie behind the demand curve. But what lies behind money costs? In other words, what are the ultimate costs which lie behind money costs of production? Following the classical

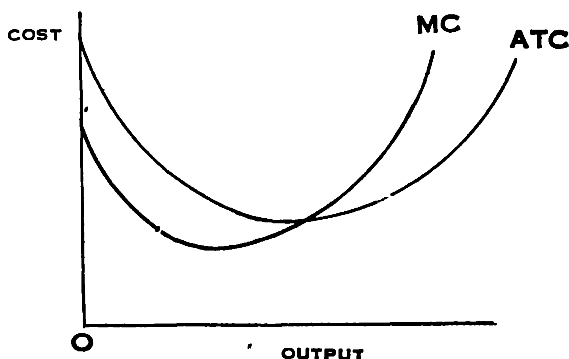


FIG. 24

economists, Marshall thought that money costs represented *real costs of production, i.e.,* the sum of the efforts of working and the sacrifice involved in saving or waiting. The real costs of producing a commodity are to be measured by the efforts and exertions undergone by labourers and entrepreneurs and the sacrifice which capitalist classes have made to save the requisite amounts of capital.

Criticism of the doctrine of real cost.

That a great part of work is painful and disagreeable is beyond dispute. That saving denotes the sacrifice of the present consumption is also admitted. But what is the proper relation between these and money costs? If work becomes less disagreeable and more pleasing, would the rate of wages fall down? Certainly not. Moreover, not all kinds of labour involve pain. The most highly paid work is

generally enjoyable. Hence it is idle to say that value is in part a compensation for any real cost in labour. Moreover, there is no standard by which we can equate the real cost of labour with the real cost of saving. How the painful effort of the labourer and the sacrifice of the saver are to be measured so that we can be sure that one rupee worth of interest is the reward of a sacrifice equal in real cost to the effort of which one rupee worth of wages is the reward? The doctrine of real cost would thus 'lead us into a quagmire of unreality and dubious hypothesis.[2]

Meaning of opportunity cost.

But if money costs do not represent pains and sacrifices, how are they fixed? *The cost of a business are those payments which must be made to the different factors of production in order to attract them into that business from other lines of production.* Our means are short and limited. Hence if we are to employ a certain amount of each of the factors of production in one business, that means that other businesses would be deprived of their services. And in order to attract factors to any line of business, we must offer them at least as much as they would have got in other occupations. The sum of these offers is the cost of production of the present business unit.' This is, in short, the underlying idea beneath the theory of opportunity cost.

Money costs represent the costs in alternative employments.

Thus what labour would get in one employment would depend on what it can get elsewhere. What rates of interest capital would be entitled to get in this industry would depend on what it can get elsewhere. What entrepreneurs can get as their normal earnings of management would depend on what salaries they can obtain when employed as managers by joint-stock organizations. In this way, the cost is the cost of 'displaced alternatives.' The cost of producing a thing would be determined by the value of the thing that has not been made, but could have been made by the displayed factors of production. 'The unborn is the cost of born.'

[2] Henderson. *Supply and Demand,* p. 164.

Similarly, the utility of one thing to a person will depend upon that of other things he will have to surrender. Our desires are long and unlimited, but life is short, and so also our means. Hence the enjoyment of one sort of pleasure means the foregoing of some other pleasures. Man's life in its economic aspect is thus a continuous tragedy. The cost of obtaining a thing is therefore what must be surrendered in order to get it. The cost of a few hours of work is the leisure that we would have to forego.

Such is then the doctrine of opportunity cost. "The real cost of anything is the curtailment of the supply of other useful things which the production of that particular thing entails." Cost tends to equal the payments that factors of production would have got in alternative employments. Now this means that the supply of factors is fixed, which is of course a fact; for economic science deals with scarce means. But it has been argued that where the supply is variable, the doctrine of real cost could provide a satisfactory explanation of cost.[3] But even if the supply is variable, the concept of opportunity cost holds good. 'Variation in the supply of land in production are accompanied by changes in the supply of land put to consumption uses:'[4]

[3] Edgeworth. *Papers relating to political Economy*. Vol. III, pp. 56-64. Also Robertson. *Economic Fragments*, p. 21.

[4] Robbins "Certain aspects of the theory of costs." *Economic Journal*, March 1934, p. 24.

CHAPTER XV

PRICE DETERMINATION IN PERFECT COMPETITION

We have studied the characteristics of the demand curve as well as the condition of supply, and are now in a position to examine the way in which the price of the output is determined in the market. We propose to study the theory of the pricing of output in several chapters. In the first two chapters, factors determining the value of a commodity sold under conditions of perfect competition will be studied. The next chapter will be devoted to a discussion of the pricing of inter-dependent commodities. Lastly, two chapters will be devoted to a discussion of monopoly and imperfect competition.

SOME PRELIMINARY CONCEPTS

We propose at this stage to introduce the reader to some important concepts. The aim of every business is to earn the maximum possible profits. Since profits are the difference between the sale-proceeds and the costs of a business, the determination of maximum profits will, therefore, depend on earning as large sale-proceeds as is possible and on trying to make the costs as low as possible. Given the costs of production, profits will depend on the volume of sale proceeds. Now the term 'revenue' is used to denote the sale-proceeds of a business. We shall next discuss the meaning of the concepts, total revenue, average revenue and marginal revenue.

Total revenue means the total amount of sale-proceeds of a commodity. If a seller succeeds in selling 100 units of a commodity at the price of Rs. 2 per unit, the total revenue is equal to Rs. 200. *Average revenue* is found out by dividing the total sale-proceeds by the amount sold in the market. *Marginal revenue* is "the addition to the total revenue produced by selling an additional unit of output." Let us suppose

that the demand for a commodity is such that a businessman will be able to sell 10 units of the commodity at Rs. 2 per unit. His total revenue is Rs. 20. If he wants to sell 11 units the price will come down to Rs. 1/15/- per unit. The total revenue in this case is equal to Rs. 21/5/-. Thus the sale of the 11th unit increases the total revenue by only Rs. 1/5/-

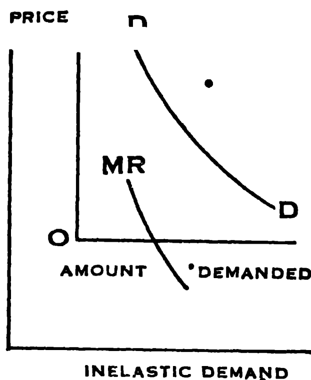


FIG. 25

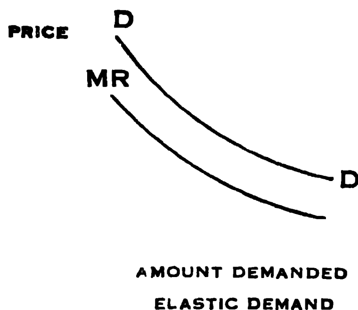


FIG. 26

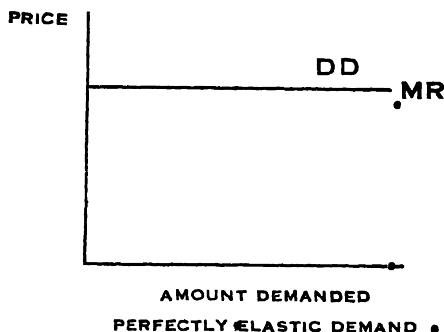


FIG. 27

instead of Rs. 1/15/-, the price. The marginal revenue of the 11th unit is thus Rs. 1/5/-. If he sells 12 units at the price, Rs. 1/14/- per unit, the total revenue will be equal to Rs. 22/8/-. The sale of the 12th unit thus adds only Rs. 1/3/- to the total revenue. The marginal revenue of the 12th unit

is Rs. 1/3/-. Marginal revenue is equal to the difference made to the total revenue by the sale of an additional unit of the commodity.

When the elasticity of demand for a product is greater than unity, a fall in price brings about an increase in the total sale-proceeds, *i.e.*, total revenue. In this case, the marginal revenue will be positive. But if the elasticity of demand is less than unity, a fall in price will bring about a decline in the total revenue. The marginal revenue will then be negative. When the elasticity of demand is equal to unity, total revenue will remain the same, whatever the change in price, and the marginal revenue will be zero. Lastly, if the elasticity of demand is infinite, the marginal revenue is equal to the price (or average revenue). The proof of this is obvious. When the elasticity of demand is infinite, the seller can sell additional units of a commodity at the same price as before. In other words, when he sells either the 11th or 12th unit in the market, the price remains Rs. 2 per unit without declining. Since 10, 11 and 12 or more units are sold at Rs. 2 per unit, the total revenue will be Rs. 20 when 10 units are sold, Rs. 22 when 11 units are sold and Rs. 24 when 12 units are sold. The difference to the total revenue in each case is equal to Rs. 2 the price. Hence when the elasticity of demand is infinite, marginal revenue is equal to the price. All this is illustrated in the three figures on page 177.

VALUE UNDER PERFECT COMPETITION

The starting point of the discussion is the assumption of perfect competition in the market for a product. Competition will be perfect when (1) there is a large number of buyers and sellers of a product ; (2) all the sellers sell in the market an identical product of such a nature that buyers make no distinction in their mind about the commodities sold by different sellers ; and (3) both buyers and sellers have full knowledge of the prices prevailing in the market, *i.e.*, buyers know the prices charged by different sellers, and seek to buy at the lowest price possible. Such a perfectly competitive market can be found only in a very few cases. The market for agricultural crops like wheat and other grains may be

found to satisfy these conditions. But as a whole, a perfectly competitive market is usually an exceptional case.

How is the value of a commodity determined under conditions of perfect competition? It will be useful here to study the problem on the basis of time intervals. Marshall was the first economist to lay proper stress on the importance of the time element in a study of the theory of value. He distinguished between four periods of time, viz., an extremely short period, short periods, long periods and secular periods. The first is such a length of time during which supply remains fixed. Value during such a period is to be known as market value. In the short period, the supply is variable no doubt, but it will consist of that amount of output that can be produced with the existing plants and machinery by the existing firms in the industry. This is the short-run normal value. The long period consists of that interval of time of several years during which both the number of firms in the industry and the size of the individual firms can be changed. The long-run supply, therefore, means the output that can be produced by building new machinery, by rearing up larger supplies of skilled labour, etc. This is the long run normal price. In the secular period, supply will refer to the output that will be produced with the adoption of new inventions and improvements, greater accumulation of capital, growth of population, etc. We propose to omit the discussion of the secular period as it does not involve any new principles, and proceed to study the factors determining market value, short-period normal value and long-period normal value.

Market value : Market value is that value of a commodity which prevails in the very short-period when its supply remains more or less fixed. The best illustration is furnished by an extremely perishable article like milk. As it is extremely perishable, the total quantity of milk that has already been brought to the market on a day must be sold in course of the day. The supply being thus fixed, its value will depend primarily on the forces of demand. There is for every commodity a given market demand, showing the amounts buyers are willing to buy at stated prices. If the demand for milk rises, its price on that day will rise. The cost of production of milk will have little influence on its value on that

particular day. Whatever the state of demand, the total supply must be sold on that day. A temporary equilibrium will be established for that day at which the supply will be carried off.

Not every article is perishable like milk or fish. Most of the articles of daily use are not so perishable and their supply can be kept in stock for a certain period. If the market value falls below the figure considered reasonable by sellers, they may decide to withhold a part of it to be disposed of in the future. If, for some reason, the demand increases and the price goes up temporarily, sellers may decide to deplete their stock of the commodity and increase the supply on the market. Thus the tendency of the price to rise will be checked to some extent. This tendency to

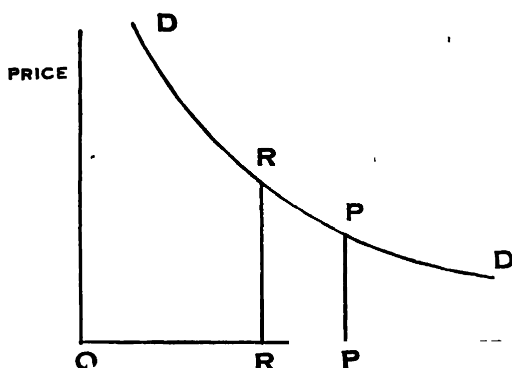


FIG. 28

withhold or deplete stocks of the commodity will be governed by the expectations of the dealers about the short-run normal price. If they expect that the price in the near future will be higher than the present market price, they will withhold stocks, as a result of whch the market price will tend to rise, and vice versa. Hence market values are also influenced by the probable conditions of future demand and future supply of the commodity.

This is illustrated in fig. 28. The curve DD represents the demand conditions existing in the short-period market, and the sellers start with OP amount of output. If they have to sell the whole of it, the price will be PP. If, how-

ever, they decide to withhold a part of the supply, and sell only QR amount, the price will rise to RR.

Normal value: While market value is that value which prevails in the very short period when the supply of a commodity is fixed, the term, normal value, is used to refer to that value of a commodity which prevails when producers have ample time to change their output in response to changing demand conditions. In the discussion of normal value, we assume that existing economic forces or a given set of conditions have a sufficiently long time in which to exert their full influence, while no other change takes place in the meantime. *What is the relation between market value and normal value?* In our study of market value, we assumed fixed supply of a commodity for the time being, and the value of this output will be determined mainly by the conditions of demand. Since, however, sellers will usually keep some stock of the commodity, they will put forth larger or smaller supplies on the market in accordance with their anticipations of future normal value. Hence though the market value may be influenced by temporary factors like sudden changes in demand it has a tendency to fluctuate round about the normal value. With the fluctuations in the supply and demand of a commodity, the market value may rise above the normal value at one time, or may fall below it at another. But normal value is the centre round which the market value moves. A pendulum has a central resting place. Passing events may disturb it and send it to and fro from its position of equilibrium. But it will always have a tendency to return to the position of equilibrium, *i.e.* the centre. Similarly with market value, which, though disturbed by passing events, will generally gravitate towards the normal value.

Normal value and market value.

Normal value, it should be carefully noted, is not the average of the market values. It is the value that will prevail as a result of the influence of a given set of factors. The conditions which are normal under one set of circumstances may not be normal under another set of circumstances. Hence normal value will not in general be equal to the average of market values of several days.

Short-run normal value : With respect to the short-run normal value, we assume a period of time during which the supply of the commodity may be changed in response to changing conditions, but the number of firms in the industry and their existing equipments remain the same as before. Under such conditions, value will be determined according to the following principles.

The point for study is, how an individual firm, in an industry where there is perfect competition, determines its price and output. The producer is no longer faced with a situation in which he is forced to sell an unchanged supply of his product. He can vary his output upto a certain limit, *i.e.* the maximum consistent with the capacity of his plant, or he may produce and sell a much smaller output than he is turning out at present. What factors will he take into account in deciding whether to produce more output and sell it in the market? He will probably calculate, on the one hand, the additional cost that he will have to incur in order to produce extra units of output, and on the other hand, to estimate the prospective selling price at which extra units can be sold in the market. So long as the prospective selling price is such that the addition made to his total revenue by selling extra units is more than the additional cost he will have to incur, it will be profitable for the firm to produce the extra output, and sell it in the market. In other words, so long as the marginal revenue is higher than the marginal cost, it will pay the firm to produce the extra output and sell it in the market. But as it goes on producing additional output, the marginal cost will rise until it will be equal to the marginal revenue. It will not produce beyond this stage, as in that case, the marginal cost will be higher than the marginal revenue. Thus the firm will produce an output at which its marginal cost will be equal to the marginal revenue.

For a seller in perfect competition, his marginal revenue will be equal to the prevailing market price. When there is a large number of sellers, as in perfect competition, no one of them is able to influence price by selling a little more or

[1] Long-run normal value is discussed in the next chapter.

less. Every seller will be able to sell extra units of output at the same price as before. In technical language, it means that the demand curve facing each individual seller is infinite (*i.e.* a horizontal line). Hence the marginal revenue will be equal to price.

Under perfect competition, therefore, each firm will sell upto the point at which his marginal cost of production is

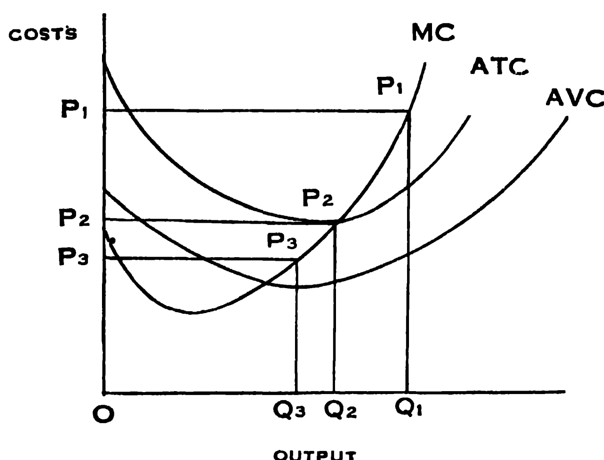


FIG. 29.

equal to the price. Such a firm has no control over price. It accepts the current market price as given and adjusts its own output in such a way that its short-run marginal cost is just equal to the price.

The short-run normal pricing is illustrated in fig. 29. MC is the marginal cost curve ; ATC the average total costs curve and AVC the average variable costs curve. We know that in perfect competition the demand curve facing each seller is perfectly elastic, *i.e.*, it is a horizontal straight line. The short-run normal price will be determined at the point where the demand curve cuts the MC. If the demand curve is represented by the line P_1P_1, the price will settle at P_1Q_1 and the seller will produce OQ_1 output. If the demand curve falls to P_2P_2, the price will be equal to P_2Q_2, and the seller will produce OQ_2 output. When the price is

equal OP_2, the marginal cost is equal to the average total cost, and both are equal to price. The producer is earning just normal profits.

If the price falls to OP_3, will the producer produce and sell in the market? At this price the producer will produce OQ_3 output, whose average total cost is higher than the price. So he will not be able to cover his total costs if he sells at this price. But if he expects the fall in demand to be of a short-period character, it will be profitable for him to continue production and sell the output at OP_3. The price is higher than his average variable cost per unit, and so he is covering his variable cost plus a portion of his fixed cost; whereas if he refused to produce and sell at this price, he will have to meet the full amount of fixed costs unless he finally shuts down his plant. Hence from the short-run point of view it still pays him to sell at OP_3, so long as the price is higher than his average variable costs. But if the price is such that it does not cover his average variable cost, then he will cease producing. Such a price is his *shut-down price*.

Short-run normal value for the industry: An industry under perfect competition consists of many sellers. The cost

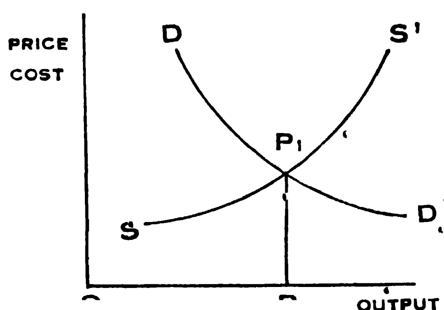


FIG. 29a.

curve for the industry consists of the sum of the marginal cost curves of all firms. It will slope upwards to the right, indicating that additional output is produced at higher cost per unit. Similarly, we can find out the aggregate demand curve for the industry, which is unlikely to be horizontal.

This is represented by the demand curve DD^1, showing the total amount which all buyers will take at each price. The intersection of the two curves shows the equilibrium market price.

SS^1 is the marginal cost curve for the industry and it intersects DD^1 at P^1. So the equilibrium price is PP^1 at which all sellers contribute an amount of output equal to OP.

CHAPTER XVI

PRICE DETERMINATION IN THE LONG-RUN

So long we have been studying the forces which determine the value of a commodity in the short-run under conditions of perfect competition. The main characteristics of such short-run are, first, the size of each firm in the industry remains the same, and second, the number of firms in the industry also remain the same. Our next task is to remove these assumptions. We take a period of time long enough to ensure that, in response to changing demand, the number of firms in the industry changes and each of these firms also changes in size to meet new conditions. When the demand for a product declines in the long run, the number of firms in the industry may decrease, or firms may shut down plants and produce a smaller output. If the demand increases, existing firms may set up additional plants, or more firms may enter the industry.

Long-run normal value : In our discussion of the short-run normal price, we have seen that each firm will produce upto the point at which its marginal cost will be equal to the price. This is quite alright insofar as we keep the assumptions about no change in the number and size of firms. But the analysis tells us nothing about the fact whether, given a longer period of time, the number and size of firms will increase, contract or may remain stationary. To answer this question, we must find out the relation between the price and the average total costs of production of the firm. Let us assume as in fig. 30, the demand conditions are such that the price settles at P_1Q_1. In other words, the demand curve facing the firm is represented by P_1P_1, and it intersects the MC curve at P_1, and the firm produces an output equal to OQ_1. From the average total costs curve (ATC) we learn that the cost per unit of output when OQ_1 output is produced will be Q_1q. Since Q_1q includes the normal earnings of management, the firm is then earning an

extra profit of P_1q per unit of output. So it will have every incentive to expand its output by enlarging its plant capacity. Or, new firms will enter this industry, lured by the prospect of earning very high profits. In these ways, the supply of the commodity will increase, and given the same demand condi-

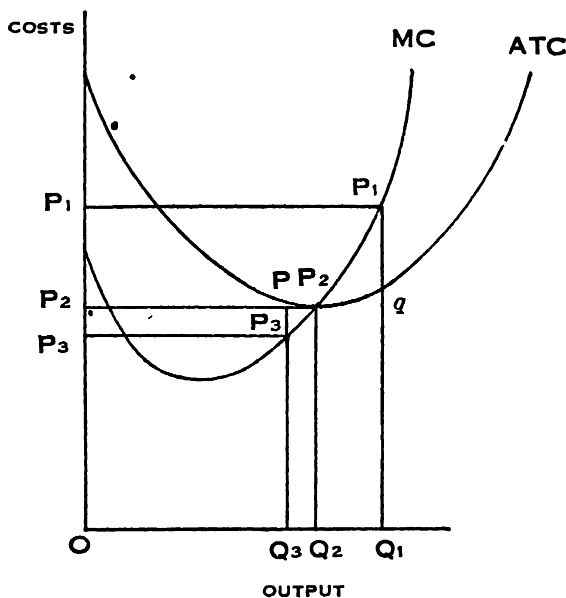


FIG. 30.

tions, the price will tend to fall down until, let us suppose, it is equal to P_2Q_2. This is the point where the marginal cost curve intersects the average total costs curve, and the average total costs are at the minimum. The price P_2Q_2 is just equal to the average total costs per unit *i.e.* P_2Q_2. Thus long-run equilibrium for the firm is to be found at the price P_2Q_2, where price = marginal cost = average total costs. This can also be proved by assuming a lower demand curve P_3P_3. It cuts the MC curve at P_3, and the price is P_3Q_3, and the firm is producing OQ_3 output. But the average total cost of OQ_3 is Q_3P, which is higher than the price P_3Q_3 by PP_3. Hence the firm is incurring losses, being unable to cover its full fixed costs at this price. It will, therefore, tend to cut down its output and some of the weak firms

will probably shut down production. As a result, the total supply will decline, pushing up the price to P_2Q_2.

Thus the price of a commodity will tend to be equal to the long-period minimum average costs of production of all firms. Under the conditions, the minimum average costs per unit will be the same for all firms. These firms earn only normal profits, *i.e.* earnings of management, wages and interest etc., which are included in the total average costs. None of them earns excess profits. Since all firms are producing at the lowest average costs, they are operating at their optimum size, consistent with their resources and organizing capacity.

Long-run cost variations and pricing : We must now take account of the fact that a variation in output, caused by a change in the scale of production, may lead to rising or falling or constant costs of production in the long-run. A discussion of these cases of constant cost, increasing and decreasing cost is of great interest to the economists.

Constant cost : When a firm extends its scale of production in the long run, its average minimum costs may remain the same, whatever the amount of output it produces. This will happen when, if all the factors of production are increased in a given proportion, the output is increased in

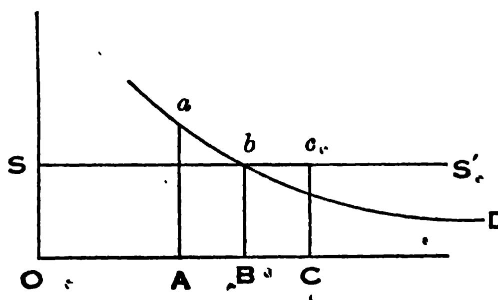


FIG. 31.

the same proportion. This, of course, assumes that prices of the factors of production will not be affected by a change in the scale of production in the industry. In other words, the industry uses only a very small part of the total supply of each factor of production.

In this case, the supply curve SS′ is a straight line at the constant level of unit costs. It intersects the demand curve DD at b ; the price will be equal to bB and OB amount will be produced. If, however, the actual price is equal to (say) aA, sellers will receive large profits. So they will produce more output, as a result of which the supply will increase, and the price will fall. Conversely, if the actual price is less than bB, *i.e.* equal to cC, cost of production per unit will be higher than the price, and sellers will be unable to earn normal profits. Output will contract until the price becomes equal to bB.

Increasing cost : In drawing up the long-run average cost curve, it is generally assumed that the plant, equipment and all other factors are freely variable. It is possible for every firm to vary the proportions in which different factors are to be combined in the business. While in the long run the proportion in which factors of production may be combined is assumed to be variable, there are, however, certain limits regarding the possibility of such variations. It is quite possible that the supply of a particular factor, or a combination of factors may be inelastic even in the long run. An extreme example is furnished by land—the classic case cited by Ricardo. The quantity of agricultural land is taken to be fixed and all of it is cultivated or occupied. Hence as population increases, and the need for growing more crops rises, more or other factors may have to be combined with a fixed supply of land. Even if the supply of a factor is elastic, additional units of the factor may be less suitable for employment in that particular industry. They are probably less efficient for this purpose. Since these additional factors have to be paid at the same rate as that paid to the efficient factors, the cost of production of the additional output will increase. Or lastly, the price of a particular factor of production may rise as the demand for its services increases. This may be necessary in order to attract this factor away from other industries or sources of employment. Therefore, as the demand for this factor increases, the marginal and average costs of all sellers will rise. Even if the supply of all other factors is freely available at constant cost, the tendency towards increasing cost will persist after a certain

point as the factor, management, is fixed in quantity, and cannot be increased with increasing scale of production. So the diseconomies of very large-scale management will cause costs of production to rise more rapidly than output.

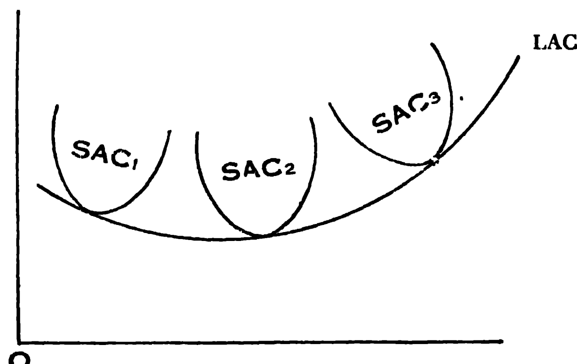


FIG. 32.

The long-run average cost curve is represented in fig. 32. SAC_1, SAC_2, and SAC_3 are the short-run cost curves, depicting changes in the scale of production. SAC^1 represents the cost curve when a certain output is produced; SAC_2 is the cost curve of a large output and SAC_3 of still larger output etc. At first the long-run minimum average costs fall as output increases, and then it begins to rise. LAC is the long-run average cost curve, which is tangent to the short-run cost curves determined above.

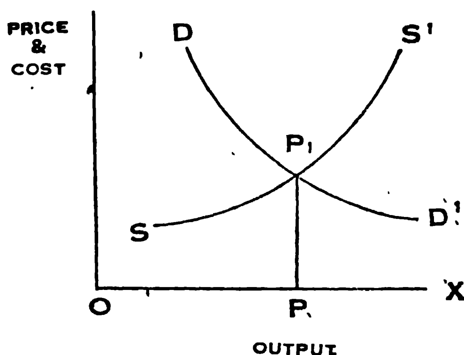


FIG. 33.

Given the long-run average cost curve, and the long-run demand curve, the value of the commodity produced under conditions of increasing cost (or diminishing returns) will be determined at the point of intersection of the two curves.

Decreasing cost : Is there any case where an increase in the scale of production leads to decreasing cost per unit of output? Indeed it is well-known that as a firm expands its output, it is able to secure certain economies of production, both internal and external, as a result of which its costs of production tend to fall. When supplies of all factors are increased proportionately, it is stated that improvements in organization can be made which will increase the efficiency of the factors of production, and so lower costs. Are there any reasons for accepting this view?

Causes of increasing returns.

The increase in efficiency which results in a larger output may be due primarily to two reasons. It may occur because the factors in question consist of large indivisible units. The conditions of production are such that investments must be made in these indivisible units before any output can be produced. For example, a machine which has a certain cost must be installed whether the output is small or large. The entrepreneur is also such as indivisible unit. When an indivisible unit of a factor has to be used, the fixed cost of that unit can be spread over a large output as production increases in response to demand. The result will be a fall in cost per unit of output as more is produced. The classical example is that of a rail road which has to be built in a new territory. If there is to be any rail road at all, a minimum investment in railways, stations, rolling stock, etc., must be made. In the beginning, there might not be enough traffic to utilize the capital represented by the way and structures to its full capacity. But as the territory is developed, traffic increases. The rail road can meet this increased demand by running more trains. It will have to buy additional rolling stock and hire a few more employees. But no additions need be made to the road bed, stations and the structures. These are the fixed agents of production ; and because these fixed agents need not be increased as traffic increases, the cost of

production per unit of output continues to decline. This principle is in operation in almost every type of business. Small manufacturers are not in a position to utilize to the full extent every individual piece of machinery, or every individual employee. Technical experts and highly skilled employees may not be fully occupied with the work they are best fitted for. An increase in the size of the business will bring about a better utilization of their services, and the total unit cost will decline.

Another way in which improvements in organization can be made is through increased specialization. There are several scales of specialization available to a particular industry. Larger output will make possible the adoption of higher scales of specialization leading to increased efficiency and falling costs. Each separate action in the process of production can be performed by a factor of production specially adapted to that particular operation. As the demand for the products of an individual firm increases, it will be able to use large and expensive machines, and the services of experts, or of highly skilled labour. Its marginal cost will therefore fall.

These are all instances of "internal economies", *i.e.*, economies available within the firm itself as it grows in size. They are due to the better utilization of plants, or to greater specialization within the firm. Falling costs may also be due to the availability of "external economies", as Marshall called them. These are economies which are available to a particular firm as the industry grows in size. For example, when a new firm enters a particular industry, it may enable all firms to produce cheaply. Machinery can be bought more cheaply by all of them because the industry now presents a larger market to the machine-producing firms.

External economics.

But the tendency towards increasing returns does not continue indefinitely as a firm grows in size. A time will come when the attempt to increase the output after the fixed agents are fully utilized, will meet with diminishing returns. So long as the economies continue, each firm will be able to reduce its cost by enlarging its output. If perfect competition exists, it will be to its interest to do so.

While the cost per unit declines, it is able to sell the additional output at the same price as before. Hence under perfect competition, each firm will expand in size upto the optimum point, beyond which no further economics are available. If it further expands in size, it will meet with increasing costs. If there is perfect competition, each firm will thus be at its optimum size, producing at the lowest average cost; and any further expansion will mean increasing costs. Moreover, it is quite possible that in certain industries, the economies of large-scale production may be available to such an extent that the whole market may be supplied by one firm before it surpasses its optimum size. Such an industry is a natural monopoly. In other industries, the optimum size of firms may be so large that only a few firms can supply the whole market. Perfect competition will then cease to exist. In still others, though the number of firms in the industry may be large, the optimum size may be such that each firm is producing a considerable portion of the total supply. In that case each will be able to influence the price by varying its output, and as before, perfect competition will cease to exist.

A NOTE OF THE CONCEPT OF THE REPRESENTATIVE FIRM

Marshall on difficulties of increasing returns.

The concept of the representative firm has been introduced by Marshall to find a solution for the difficulties of determining the long-run normal value of a commodity whose production obeys the law of increasing returns. According to Marshall, the term "marginal cost of production", "has no significance for long periods in relation to commodities the cost of production of which diminishes with a gradual increase in output." He assumed that under conditions of perfect competition, there will be a large number of firms in the industry, each at different stages of growth. He conceived of a definite life-cycle for the different firms. "As the leaves of a tree grow to maturity, reach equilibrium, and decay many times, while the tree is steadily growing upwards year by year", so the firms grow steadily. The young

businessman, when he starts a firm, will probably be undergoing losses. But he will still struggle on, in the expectation that he is doing well and slowly gaining a footing. Gradually, if he is able, he will manage to get loans, go on expanding his business until he reaches the height of his powers. As he becomes old, his business is likely to decay. If there is a large number of firms, each producing at different stages, whose costs are we going to take into consideration? Is the average cost to be determined with reference to the cost of the most efficient firm? Price cannot be equal to the average cost of his firm as its costs are the lowest, and the less efficient firms whose costs are higher will then be unable to earn normal profits. It cannot be the cost of the least efficient firm, as that firm may not earn any profits at all. The long-run normal value must include what Marshall called 'normal profits'. To solve this difficulty, he introduced the concept of the representative firm. Long-run normal value will be equal to the cost of production of the representative firm.

What is a representative firm?

The representative firm is not a new firm just struggling into business, nor is it a firm with a vast business and gigantic plants. It is a firm "which has had a fairly long life and fair success, which is managed with normal ability, and which has normal access to the economies, external and internal, which belong to that aggregate volume of production".[1] Value in the long run will tend to equal the marginal cost of production of such a firm. A price higher than this will lead to an increase in the size and the output of such a firm; while a price lower than this will tend to decrease them. When value settles at that figure, there is equilibrium and no tendency towards an increase or decrease of the output of the industry as a whole.

(a) Is it an average firm?

Is representative firm an average firm? It is not an average of the existing firms. It is a long period average firm, under conditions when all the present tendencies have reached a state of equilibrium. It has been asked whether it was a "representative plant, or technical production unit, or a

[1] Marshall—*Principles of Economics*, p. 318.

representative business organization".[1] But it should be noted that business is an organic whole and should be considered as a whole. The representative firm is, therefore, representative of every aspect of the firms of the industry, when a given aggregate volume of output is produced. That is the purpose of Marshall's statement that it 'has normal access to the *economies, external and internal, which belong to the aggregate volume of production*'. Again, it has been asked whether the representative firm was representative of *size*, or representative of cost.[2] Though Marshall is inclined in some places to lay stress on size, he had clearly in mind the fact that it was representative of the normal cost of the industry. That is also the opinion of Robertson; "in my view .... it is not necessary to regard it as anything other than a small-scale replica of the supply-curve of the industry as a whole".[3]

Equilibrium firm.

Pigou has a similar concept. According to him, even when the whole industry is in equilibrium, *i.e.*, when the industry produces a given output *y* in response to a given demand represented by a normal price *p*, the different firms composing the industry may not be in equilibrium. Some may be rising, while others are declining. But there *can* exist some one firm, which, when the industry is in equilibrium, will itself be in equilibrium, producing a regular output in response to the normal supply price. Such a firm he christens an *equilibrium firm*.[4]

Criticism.

Such is then the concept of the representative firm. It has been vigorously criticised in recent times. We have already examined some of these criticisms and seen that the representative firm is an average of a special kind, a long-period average firm; that it represents the business-as-a-whole, instead of any of its particular features. The real difficulty lies with regard to another problem. Is it possible that in the long run, when

the industry is in equilibrium, there may exist some firm or firms, which are actually producing at a loss? If such a firm exists, then its costs cannot represent the long period supply-price of the industry as the long period supply-price must include normal profit. But Robbins denies this position. In the long run, no entrepreneur, unless he is of sub-normal efficiency, will be producing at a loss, for in that case he will shift to other industries. Equilibrium can only exist when an entrepreneur of normal efficiency must get as much profit in that industry as he could have earned in other lines of production. *"There is no more need for us to assume a representative firm, or a representative producer, than there is for us to assume a representative piece of land, a representative machine, or a representative worker".*[1] All factors must earn normal earnings in the long period. So the producers must also earn normal profits. Otherwise there will set in a tendency to shift, and equilibrium will be disturbed. Marshall and Pigou think otherwise. In their opinion, even in the long period when the whole industry is in equilibrium, there may exist certain firms of normal efficiency which are producing at a loss. All that is necessary for equilibrium to exist is that the tendency to expand on the part of young firms will be offset by the opposite tendency to decline on the part of the old firms. That is the real purport of Marshall's analogy of trees. A firm has a definite life like an individual. Like the latter, the former passes through the seven stages of life. For equilibrium to exist it is not necessary, therefore, that a particular firm's output should be in equilibrium when the industry is in equilibrium. The concept of the representative firm is considered quite appropriate for a study of the long period supply price of an industry.

Practical utility of the concept.

The practical utility of the doctrine has been called in question. The representative firm is not an average of actual firms in the industry. No firm in the business directory, says Robertson, can be said to represent the representative firm. It is a long-period average firm when the given

economic forces have reached the state of equilibrium:—a concept of the 'stationary state'. Hence the practical usefulness of the doctrine is stated to be limited. But the researches of Chapman and Ashton into the sizes of the business units in the Lancashire textile industry[1] have shown that "this conception is appropriate to actual conditions." This has also been corroborated by Taussig from his experiences of the working of the Price-fixing Committee of the U.S.A. during the first world war.[2]

Competitive conditions are incompatible with increasing returns. Hence the concept is useless.

But the more fundamental criticism which cuts at the very root of the doctrine is that where tendency to increasing returns prevails, the resulting situation in the long period will be characterised by either a monopoly or imperfect competition. The representative firm analysis presupposes the existence of perfect competition, of many firms and of the tendency to increasing returns. And it is only the cost of the representative firm which is equal to the normal supply-price relative to an aggregate output. But if the tendency to decreasing costs continues in the long run, there will exist, not many firms in that industry, but only one firm or a few firms. So long as it is possible for a firm to secure more and more economies as it expands in size, it will go on producing larger and larger output to get the benefit of lower costs. If the firm has an early start, or if it is managed by a dashing entrepreneur, it will beat all its rivals by selling at lower prices, and will ultimately capture the whole market. The resulting situation will then be monopoly. Or as a firm expands in size to avail itself of the economies of large-scale production, it will come to produce a large part of the total output in the industry. Competition will

then cease to be perfect. Value will be determined as under imperfect competition.[1] In any case there is no place for the concept of representative firm in the theory of value. If perfect competition exists in the long run, the tendency to increasing returns must have exhausted itself. Each firm will then be of the optimum size, producing at the lowest average cost, and price will be equal to that cost.

CHAPTER XVII

INTERDEPENDENT PRICES

Thus far we have proceeded on the assumption that the price of a commodity can be determined independently of the prices of other goods. But the prices of two or more goods may be so inter-related that a change in the demand for or supply of one will affect the demand or supply and the price of others. We are now going to consider cases of such inter-relationship of prices.

Joint demand : *Goods are said to be in joint demand when they are jointly demanded for satisfying a particular want, or for producing a particular thing.* A motor car and petrol jointly satisfy the demand for a motor ride. They are said to be in joint demand. There is also a joint demand for pen and ink, tea, milk and sugar (for making tea), etc. A most important illustration of joint demand is found in the case of factors of production which are required for the production of a commodity. For example, various groups of labourers, like plasters, masons, carpenters and various kinds of materials like brick, lime, cement, etc., are jointly demanded for building a house. These commodities are also known as *complementary goods.* The demand for the ultimate product which the factors of production help to produce is said to be direct demand ; while the demand for factors of production is derived from the original demand for the product, and is, therefore, said to be indirect, or derived demand.

Complementary goods.

What modifications does this fact introduce into the theory of value? In the case of articles which are jointly demanded, it is difficult to estimate their separate demand schedules. The utility of raw cotton, textile machinery, etc., is derived from that of the shirt. But how much of the utility of the shirt can we ascribe to raw cotton, and how much to the textile machinery? There is no method by

which we can find it out. How are we then to determine the value of things that are jointly demanded?

The marginal analysis enables us to tackle this problem. In regard to things jointly demanded, we determine their marginal utility by changing the amount of one thing, while keeping the supply of others constant. In other words, by substituting a little more, or a little less of this or that thing (while keeping other things constant), we can measure the marginal utility of a commodity. Bread and butter are jointly demanded. Assume that the quantity of bread remains the same and that of butter is increased by a small amount, how much additional utility will then be enjoyed by a consumer? This would measure the marginal utility of butter to the consumer. Or, to take another illustration, let us suppose that two different methods can be followed in the manufacture of cotton piece-goods—we can use three looms per worker, or we can employ four looms per worker. The increase in the output of piece-goods that will result in the second case can approximately be attributed to one loom *i.e.,* to one unit of capital. We can then regard this extra product as the marginal product, or the marginal utility of one unit of capital. *Thus by varying the proportions between the different factors which are in joint demand, we can find out the separate marginal utility of each.* Value will settle at that figure which equates the marginal utility and the marginal cost of production.

When will a trade-union be able to raise the wages of its members?

Under what circumstances may a factor of production, which is jointly demanded with others for the production of a consumable commodity, be able to obtain higher prices for its services? In building a house, various kinds of labour, such as that of masons, plasterers, carpenters, are jointly demanded. Let us suppose that there is equilibrium between the demand and supply of buildings, and of the factors required for producing them. Now, plasterers have gone on strike for higher wages. Under what circumstances will they be able to obtain higher wages?

The first condition is that the plasterers' labour must be indispensable, and there are no good substitutes available.

In technical language, the demand for the services of that factor must be *inelastic*. The necessity for this condition is obvious. If their services can easily be dispensed with, plasterers will not be able to get higher wages. *The second condition is that the demand for the ultimate commodity for whose production that factor is used must also be inelastic.* To take up our illustration, if the demand for buildings is inelastic, a fall in their supply would raise their price very high. The strike of the plasterers would lead to a stoppage of building construction, to a fall in their supply, and hence to a great rise in their price. Lured by this high price and the consequent high profits, builders will be willing to pay higher wages to the plasterers. *The third condition is that the price of that factor must form a very small part of the total cost of production.* The total wages-bill of plasterers should form a small part of the total cost of buildings. They must possess, in the words of Henderson, "the importance of being unimportant." Since their wages form a very small part of the total cost, a slight rise in wages would not materially add to the total cost. And so businessmen may decide to satisfy the demand of the plasterers. *The fourth condition is that other co-operating factors should be "squeezable."* If a slight fall in the demand for other factors leads to a considerable fall in their wages or prices, sufficient margin would then be available for the payment of higher wages or prices to the original factor. If, owing to a stoppage of building construction, consequent on the plasterers' strike, masons and carpenters, having no alternative occupations, are willing to accept lower wages, plasterers can be paid higher wages out of the balance thus available.

If any of these conditions is satisfied, the particular factor will be in a position to obtain higher earnings.

Meaning of joint supply.

Joint supply : *When two or more commodities are produced with the same joint cost in such a way that the production of one would automatically involve the production of others ; they are said to have a joint supply.* They are also called 'joint products' or 'joint-cost' products. Good instances of joint supply are cotton seed and cotton fibre ; wool and mutton ; gas and coke, etc. The most important characteristic

possessed by them is that the investment of labour and capital in the production of one would automatically lead to the production of others. In case of joint products, the less important products, *i.e.*, those whose prices are low, are generally called *'by-products'*.

How is the value of joint products determined? We only know the *total* cost of producing both wool and mutton. But we are not in a position to know the *separate* cost of production of either. And since we cannot disentangle the cost of each, how can we determine their price?

Division of joint products into two classes.

For the purpose of analysis, we shall divide joint products into two groups. There are certain products whose relative proportions can be varied. Wool and mutton belong to this section. By suitable cross-breeding, we can have a breed of sheep, which yields more mutton and less wool, or less mutton and more wool. In this way, the production of wool and mutton that can be obtained from sheep can be varied. Secondly, there are certain products whose relative proportions cannot be varied, at least by man. The proportion of cotton fibre and cotton seed that will be produced from a given amount of cotton crop is more or less fixed by nature.

If joint products belong to the first group, *i.e.*, if their relative proportions can be varied, the previous analysis will be adequate to explain the price of each. We may not know the aggregate cost of producing either wool or mutton. But if we can determine the marginal cost of either, *i.e.*, the cost of producing additional units, or one unit more or less of a commodity, we can determine the value of each. Value, as we know, tends to be equal the marginal cost of production. Now let us calculate the cost of breeding a number of sheep, which would yield a certain amount of wool and of mutton ; and also the cost of rearing a number of another breed of sheep, which would yield the *same amount of wool,* but a different amount of mutton. The difference of cost in the second case over that in the first case may be ascribed to the extra mutton that is produced in the second case. The extra cost is therefore the marginal cost of mutton.

And the price of mutton will tend to be equal to this in the long run. An illustration would make the point clear.

Suppose that a certain breed of sheep, costing Rs. 12 each, would yield 9 units of wool and 11 units of mutton. Another breed costs Rs. 10, and would give 8 units of wool and 9 units of mutton. Then 8 sheep of the first type would yield 72 units of wool and 88 units of mutton ; costs are equal to Rs 96. From 9 sheep of the second type, we get 72 units of wool and 81 units of mutton ; costs being Rs. 90. Therefore we get additional 7 units of mutton by spending Rs. 6 more. The marginal cost of one unit of mutton is 13as. 8p. Similarly, from 9 sheep of the first type, we get 81 units of wool and 99 units of mutton, costing Rs. 108. From 11 sheep of the second breed, we get 88 units of wool and 99 units of mutton, expenditure being Rs. 110. Thus we get additional 7 units of wool by spending Rs. 2 more. The marginal cost of one unit of wool is then 4as. 7p.

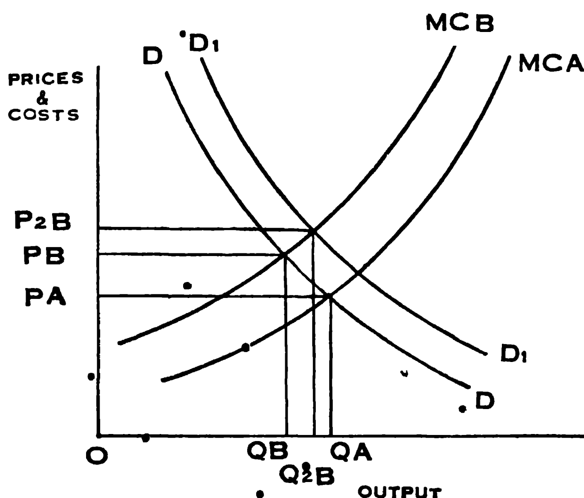


FIG. 34.

It remains to add that such variations are possible in real life. When Australian wool found a good market in England, Australians bred a type of sheep which yielded more wool and less mutton. When at the beginning of this

century, cold storage made the export of mutton possible, another breed of sheep was reared which yielded more mutton and less wool than before.

The case of joint supply where the proportions are variable is illustrated in figure 34. MC_1 is the marginal cost curve of A drawn on the assumption that the output of B remains constant ; MC_2 is the marginal cost curve of B, the output of A remaining constant. Let the market price of A is OPA and of B is OPB, the output being OQA and OQB respectively. If the demand for B rises, the output of A will increase until its marginal cost cuts the raised demand curve D_1D_1 and the price of B will rise to P_2B, while the supply of A will not vary.

But if the joint products belong to the *second section i.e.,* if their proportions cannot be varied, it becomes difficult to disentangle their marginal cost of production. The value of each will then be determined by two principles. *First,* the total cost of producing both cotton fibre and cotton seed must be covered by the total sale-proceeds. The price of each must be such that when the total supply of both is sold, the total sale-proceeds must be equal to the total cost. *Secondly,* the separate price for each would be determined by the marginal utility of each to the consumers. It will be determined by the principle, known as *'what the traffic will bear' i.e.,* what the thing will fetch in the market. But separate prices must be such that total sale-proceeds cover the total cost.

Those whose proportions cannot be varied.

But another condition may also be found. Each of the commodities may involve some separate or prime costs in preparing them for the market. These prime costs provide the limit below which the price cannot fall. The price of cotton fibre must at least cover the prime costs of marketing it. How much of the supplementary or joint costs would be charged to each would depend on how much burden each could bear, *i.e.,* on the elasticity of demand of each.

What happens to the price of one product when the demand for the other increases or decreases? Gas and coke are examples of such joint products. What happens to the price of coke when the demand for gas increases? Clearly

the greater demand for gas would raise its price ; and the producers will be making extra profits by the sale of gas. But the increased supply of gas would also mean an increased supply of coke. The demand for coke remaining the same, the price of coke would fall.

Element of joint cost in railways : Is the industry of railway transportation a case of joint cost? According to Taussig, it is ; but according to Pigou, with few exceptions, it is not. The discussion of the question is important ; for it explains the way in which railway rates are fixed.

According to Taussig, "when a large plant is used for diverse purposes, the case is so far one of production at joint cost".[1] In the railway industry, the supplementary costs, *i.e.*, the expenses of laying down the road-beds and of building wagons, engines and other plants, are a very large fraction of the total costs of railway construction. The operating expenses, *i.e.*, the cost of maintaining the permanent way and rolling stock and the expenses in connection with station staffs, are also very large and more or less, fixed. These expenses have to be incurred whether the railway plant is fully worked or not. Moreover, there are no means by which the expenses in connection with any particular service, *e.g.*, the exact cost of carrying passengers or goods, can be separately determined. We cannot assign any of these general expenses either to the freight or to the passenger services. There is also a second reason why the railways show the characteristics of joint cost. The various types of markets for which the railways cater,—the sale of transport to passengers and to goods, the sale of transport to the coal merchant and the copper merchant,—are independent of each other. The demand schedule for transport services on the part of the coal merchant is quite different, and in no way connected with the demand of the copper merchant for transport. These two chracteristics,—the huge overhead expenses and the impossibility of separately determining the cost of any particular service of transport, and the use of the same plant for supplying to diverse and independent markets—these make the industry of railway transport a case of joint cost.

[1] Taussig. *Principle of Economics,* Vol. II, p. 423.

Pigou, on the other hand, argues that except in one case, railways do not exhibit any of the characteristics of joint supply. The fact that supplementary costs of a business form a very large part of the total costs does not make it a case of joint cost. In many large establishments, like the iron and steel industry, overhead costs form a very substantial portion of the total expenses. Secondly, the fact that one service, *i.e.*, transport, is being sold to entirely different, or independent markets,—to the coal merchant and to the copper merchant,—does not in any way prove the existence of a joint product. In his opinion the element of joint cost is present in an industry, where the investment of capital in the production of one of the commodities would invariably and inseparably lead to the production of other commodities. For example, any investment for the production of cotton fibre would automatically involve the production of cotton seeds. That is the most important characteristics of joint products. But the railways do not exhibit this feature. The investment of capital in facilitating passenger transport would not invariably lead to the making of provision for freight services. The investment of plants for the transport of coal would not necessarily involve the transport of copper. Only in one case *i.e.*, the running of trains from one station A to another B, and back again from B to A, the element of joint cost is present. For the organization of railways being what it is, the running of up-trains automatically necessitates the return journey. The investment of capital in providing facilities for the initial journey would involve the investment in the provision of facilities for the return journey. Hence the industry of railway transport does not furnish a case of production at joint cost.

How are railway rates determined? There are two principles of determining railway rates ;—cost of service principle; and value of service principle. Under the *cost of service principle*, the same charge should be levied for the transport of one ton of goods per mile. That is the competitive principle. Of course, the rate per mile can be different according as the railways supply other incidental services along with transport,

Cost of service principle.

e.g., speed of transit required, (the speedier the train, the higher the rate), according as the goods are easy of handling and securely packed, etc. The *value of service principle* is expressed by the phrase, *'what the traffic will bear'*. It means fixing the rates according to the freight-bearing capacity of each commodity. For example, diamonds, being a highly-valued commodity, can obviously stand a higher charge than coal, a low-priced commodity. Some classes of goods can stand a higher charge; others only a low charge. Thus coal, lumber, etc., are low grade goods, and their rates are accordingly low. Textiles, precious metals are high-class articles, and the rates are, therefore, high. The charges are fixed in this way that profits of working the railway can be maximised. Under this principle, there will be a variety of rates unlike in the first case.

What the traffic will bear.

Composite or rival demand : *The demand for a commodity is said to be of composite nature when it is demanded in several alternative uses.* For example, steel may be demanded for the construction of a bridge, or of a building, or of machineries of various sorts. These several uses constitute the composite demand for steel. Almost every raw material, every factor of production may be used for the production of various classes of goods. Labour may be demanded for producing either consumer's goods, or producer's goods. Land may be demanded either for building purposes, or for cultivation. Each of these alternate uses is the *rival* of the other for the consumption of that commodity. Together they carry off the whole supply from the market. When different commodities compete for the services of a particular factor of production, they are sometimes called *"competing cost"* goods.

We have seen that by the operation of the principle of substitution (or the law of equi-marginal returns), a commodity will be distributed among its various uses in such a way that its marginal utility in every use will be equal. Its value will be such as to equal this marginal utility. If, in any use, its marginal utility is greater than its price, a greater supply will be diverted to that use from the other uses. The marginal utility in other uses will therefore rise, while the

marginal utility in the first case will fall, until the two will again be equal. Price will then settle at this figure. So commodities that are in joint demand will be distributed among their various uses in such a way that their marginal utilities are everywhere equal. Their price will then be such as will make marginal utilities equal in every use.

Composite or rival supply : *When the demand for a thing can be satisfied from several sources; these sources are said to constitute a composite supply for that thing.* The demand for meat may be satisfied by beef or mutton or ham. The demand for a beverage may be satisfied by tea, coffee and cocoa. Commodities which are *substitutes* for each other are proper examples of composite supply. Similarly, labour and capital, so far as one can be substituted for the other, may be said to constitute a case of composite supply. Though the different sources of supply thus compete with each other, their total supply must satisfy the total demand for that commodity. These commodities are also known as *competing goods,* as they compete with each other for the satisfaction of a particular want.

Competing goods.

Owing to the operation of the principle of substitution, competing supplies will be used upto the point where marginal utilities, or marginal net products are equal to their prices. The value of each will, therefore, be equal to the marginal utilities or net products of each. So the price of commodities that are in composite supply will be determined by the cost of producing them and by their marginal utilities, or marginal net products.

CHAPTER XVIII

VALUE UNDER MONOPOLY

Under conditions of perfect competition, there will be many sellers for a product, and all sellers sell the identical product. As a result, no seller will be able to affect the price, and each will be in a position to sell additional output at the ruling price. A monopoly is the opposite of all these conditions. A monopoly exists when there is only one producer. It must also be impossible for new firms to enter that industry, and the commodity produced by the monopolist should not have substitutes.

Like a competitive producer, the monopolist will also try to maximise his profits. The conditions under which he will produce will not be different from those prevailing under perfect competition. So the cost curves of a monopolist do not differ essentially from those of a competing producer. But there is one important difference. The firm in perfect competition produces only an insignificant part of the total output, and if he produces additional units, he will be able to sell them in the market at the same price as before. In other words the demand curve facing a competing seller is horizontal in shape. But the monopolist is the only producer and if he produces additional output, that will constitute a perceptible part of his total output so that the prices will be depressed. The monopolist will thus be able to sell the additional units only at lower prices. In other words, the demand curve facing the monopolist has an elasticity which is less than unity.

The general principle which will enable a nonopolist to earn the maximum revenue is that his marginal cost of production should be equal to the marginal revenue. Marginal cost, as we know, means the additional cost of producing an additional unit of the commodity. Marginal revenue is "the addition to the total revenue produced by selling an additional unit of

The monopolist will fix the price at the point where marginal revenue is equal to marginal cost.

output".[1] Suppose that a monopolist can sell 100 units of a commodity at a price of Rs. 2 per unit and that he can sell 110 units at a price of Rs. 1/15/- per unit. The total sale proceeds are Rs. 200 in the first case; and Rs. 213/2/- in the second case. Thus we see that if the monopolist sells one more unit his total receipts will increase only by Re. 1/5/-. This is the *marginal revenue of the additional unit*. We have assumed that the monopolist will not be able to sell additional amounts at the former price. That is the case with the monopolist. He is already controlling all business in that commodity, and he must lower his price in order to sell more. This price reduction will affect the amount which he receives for all units he is selling. Thus by selling an additional unit, the monopolist will add to his total revenue a sum equal to the price of this additional unit, minus a reduction in price on all other units he was already selling. That is why his marginal revenue is lower than the price at which the extra unit is sold. So long as what the monopolist adds to his receipts by selling an additional unit is more than what he adds to his costs by producing it, he will increase his profits by doing so. Thus when the marginal revenue is greater than the marginal cost, the monopolist will go on increasing his output. But as he produces more, the marginal revenue declines, and the marginal cost rises. When the marginal revenue is equal to the marginal cost, he will obtain the maximum profit. Any further increase in production will mean that the marginal cost will be greater than the marginal revenue. He is then making losses on additional sales. The monopoly revenue will be maximised when the marginal revenue is equal to the marginal cost.

Though the monopolist is the sole producer, it does not follow that he will always charge a very high price. A high price does not always yield the maximum profit. Such a price may reduce the sales very much, as a result of which his aggregate profits may not be large. So it will not pay him to raise his price beyond a certain point.

The marginal revenue curve MR is below the demand

[1] Joan Robinson—*Economics of Imperfect Competition*, page 51.

curve DD. It intersects the MC curve at a. The monopolist will then produce op units of output, which will be sold at the price pq.

Monopoly and elasticity of demand : In what way does the elasticity of demand for a monopolised product affect its value? Since the elasticity of demand for a product depends on the availability of substitutes, and since perfect monopoly indicates the absence of substitutes, the demand for a product under perfect monopoly is likely to be completely inelastic. But such perfect monopoly is rare and a monopolist has usually to face some competition from substitutes. There is probably some commodity which may be used to some extent as a substitute for the monopolised product. The demand for the product of the monopolist is, therefore, likely to be elastic, the degree of elasticity depending on the extent to which substitutes or near substitutes are available. In cases of elastic demand, the marginal revenue is lower than the price. The more elastic the demand, the less will be the difference between the price and the marginal revenue, and the output produced by the monopolist will be nearer to that under perfect competition. The less the elastic the demand, the less will be the output produced by the monopolist, and the higher will be the price.

Limits to the power of a monopolist : It is usually assumed that the monopolist has not only full control over the market, but also acts under no restraint. But in real life, there are always some restraints on the activities of the monopolist. A complete monopoly is rare. There are always some checks which explain the fact that a monopolist cannot charge a very high price. There is always the threat of potential competition. The monopolist must always remain on guard against any *new competitors*. Or, if he charges a too high price, it may encourage the invention and consumption of *substitutes*. The artificial indigo dye has completely supplanted the natural product. Even jute is not safe ; in different countries of the world, research is being conducted for discovering a good and equally serviceable substitute for jute. Thirdly, there is the ever present danger of *foreign competition* snatching away the gain from the monopolist. Fourthly, there is the *risk of state interference*

and state control. If he charges a very high price, there will be great discontent and clamour among the public, and the government will then be forced to take the matter in hand, either by controlling the monopoly, or by taking it over.

Discriminating monopoly : A monopolist need not always charge the same price to all customers. Since he exercises some control over supply, he can charge different prices to different purchasers, or in different markets. In fact, such is generally the case with monopoly. When a monopolist sells the same commodity at different prices, it is said to be a case of discriminating monopoly.

The monopolist may charge different prices.

Such price discrimination is not always possible. There is always the possibility of re-sale by the purchaser to whom a low price has been charged. Hence in order that a monopolist may be able to charge different prices to different customers, there should be some reason, or reasons for which consumers who are charged lower prices will not be able to sell the product to others, or there should be an agreement against re-sale. Discrimination in prices is possible under the following two conditions. First, there should be no possibility of transferring a unit of the commodity from the low-priced to the high-priced market. Such is the case with services which are directly supplied by sellers to the persons of purchasers. A doctor may charge a lower fee to poor patients, and a higher fee to rich patients ; the rich patients cannot send a poor man to the doctor to obtain diagnosis at a low fee for him. The transport of different goods on the railways is another case of such non-transferability. The fact that the railways charge a lower rate for the transport of coal than for copper would not lead to the substitution of coal for copper. Secondly, price-discrimination will also be possible when there is no possibility of transferring one unit of demand from the high-priced to the low-priced market. When markets between which discrimination is being made are distinguished according to the wealth of the customers, such discrimination becomes easy to practise. Thus a rich man would not want to become poor in order to enjoy the benefit of paying lower fees to doctors.

Cases when such discrimination is possible.

Where there is some possibility of re-sale, the monopolist makes a contract with the favoured customers, preventing them from doing that.

Discrimination may be either personal, or local, or trade discrimination. *Personal discrimination* occurs when different prices are charged to different customers according to the intensity of their desire or according to their wealth. A higher price may be exacted from persons who are more eager to buy. A higher charge would be levied on the rich than on the poor. Firms are known to discriminate against persons living in fashionable quarters. This type of discrimination is not always feasible, for it may arouse violent resentment among purchasers.

Personal discrimination.

Local discrimination takes place when a monopolist sells at a lower price at one place, and charges a higher price at other places. 'Dumping' is the best example of local discrimination. The monopolist sells at a foreign centre at a price which is lower than the price charged to domestic consumers.

Local discrimination.

Trade discrimination or use discrimination occurs when a monopolist charges a lower price to one trade than to another. Electric current, for example, may be sold at a low price to industrial concerns, at a higher price for the purpose of domestic cooking, and at still higher prices for domestic lighting.

Trade discrimination.

When price-discrimination is practised, the value in each market will be determined by the same set of principles as under monopoly. If the monopolist sells in two different markets at different prices, he will charge that price in each market which will make the marginal revenue in that market equal to the marginal cost. The marginal cost will of course be the same, whatever the number of markets. So the marginal revenue will also be the same in each market. But it does not mean that the price will be the same in each market. It will depend on the elasticity of demand in each market. If the demand is elastic for any group of buyers, the monopolist will charge a comparatively low price to that

group. But if the demand is inelastic in any particular market, the price will be comparatively high for that group of buyers.

Discriminating monopoly may sometimes bring important benefits to the customers and the society. It is quite possible that there may be two groups of buyers, one of which can be made to pay a high price as their incomes are large, while the other group, having small incomes, will not purchase unless the price is low. When one price is charged, it may be high price. Only rich buyers purchase the commodity. In that case total sales may not be large, and the sale-proceeds may be insufficient to cover total expenses of production. If a low price is charged so as to tap the poorer buyers, sales will of course increase. But sale at such a low price may prove unremunerative to the producer. Hence no output may be produced under such circumstances. But if price-discrimination is practised, the producer will charge a high price to rich buyers and a low price to the poor. Total sale-proceeds may then cover the total expenses of production. This will be especially true if the average costs fall rapidly as a large output is produced, and both consumers and the society will benefit.

Is price-discrimination beneficial to consumers?

When price-discrimination is practised, the monopolist charges a high price to one group of buyers, and a low price to another group. The first group will certainly lose while the second group will gain. If the buyers to whom a high price is charged belong to the richer classes and those to whom a low price is charged belong to the poorer classes, we may conclude that the gain to the poorer classes will outweigh the loss to the rich. In this case society as a whole will benefit as a result of discriminating monopoly.

Dumping : It means any price discrimination between different markets. When a monopolist sells some part of his output in a foreign centre at a price which is lower than the price at which he is selling at home, he is said to be 'dumping' into the foreign market. He may or may not sell below his cost of production in the foreign centre. Owing to his monopoly, he is generally in a position to

charge prices which are higher than the cost per unit in the home market. In that case, he may sell at foreign centre at a price, which, though below the home price, may be above his average cost of production.

Motive for dumping.

A monopolist may dump from a variety of motives. Thus he may do it in order to dispose of a casual overstock of goods which has accumulated as a result of an incorrect estimate of future demand. Or, he may do it to develop new trade connections, or to woo the goodwill of buyers in a new, and as yet untapped market ; or to drive competitors out of that market with a view to secure a monopoly. Or, his motive may be to reap economies of large-scale production by working his plants to their maximum capacity. The increased output may, if marketed at home, cause the price to fall very much, especially if the demand is inelastic. It will be to his interest, then, to restrict the amount marketed at home so as to keep prices high, and then to dump the surplus at a foreign centre.

As dumping is injurious to the interest of the producers of the foreign country, it has been prohibited by many countries. Anti-dumping laws have been passed, which aim at levying import duties at a higher rate on the dumped goods. India passed such a legislation in 1933 to cope with Japanese dumping.

CHAPTER XIX

VALUE AND IMPERFECT COMPETITION

We have discussed the factors determining the value of a commodity when there is a large number of sellers (*i.e.*, perfect competition), or a single seller (monopoly). But in the markets of real life, there is seldom a large number of sellers, or even a single seller. In the majority of cases, there is neither a single individual who controls the total supply, nor are there many buyers or sellers so that their individual shares are negligible in relation to the total. Such intermediate cases, where there is neither perfect competition, nor absolute monopoly, have come to be called "imperfect competition."

Conditions of imperfect competition : Under what circumstances does competition become imperfect? In our discussion of perfect competition, we have seen that for competition to be regarded as perfect, three conditions are necessary. (1) There must be a large number of buyers and sellers so that none of them can affect price by his individual action ; (2) Buyers know the prices prevailing in the market and buy at the lowest possible price ; and (3) the product sold by the different sellers is identical in quality, *i.e.*, homogeneous. The absence of any of these conditions will make competition imperfect.

Thus competition will be imperfect when the number of sellers or buyers in the market is comparatively small so that each of them supplies or buys a substantial portion of the total output. When, for example, there are few sellers of a commodity, every one of them may be in a position to affect the price. Let us suppose that there are four sellers, each supplying 5,000 units of the commodity. If one of them decides to increase his output by only 5 per cent, his output will now be 5,250 units ; in other words the total supply will increase to 20,250 units, instead of 20,000 units. This will certainly affect the price at which he will be able to

sell. The seller can therefore sell the additional output only at a lower price. The demand curve facing each seller will, therefore, slope downwards. Secondly, competition will be imperfect if buyers do not possess complete knowledge about the prices charged by sellers. Because of their ignorance, or because of the existence of very high costs of transport, buyers may not purchase the commodity from sellers who offer it at the lowest price. In this case, the number of sellers may be large, but competition will be imperfect. Lastly, competition will be imperfect if the products sold by different sellers are not homogeneous. The product of each seller may be similar to, but not identical with the product of other sellers in the industry. For example, a tin of Polson's butter may be similar in kind to another tin of Lord's butter. But because of the idea that there are differences, real or imaginary, in the quality of these two products, each buyer may have a definite preference for the one rather than for the other. As a result, each firm will have a group of buyers who prefer, for one reason or another, the product of that particular firm. That firm then occupies something of the position of a monopolist. He has a partially independent market for his product, and can charge a slightly higher price without driving away the bulk of his customers. This existence of these differences in the quality of different products is known technically as *"product differentiation"*. This product differentiation makes competition imperfect, though the number of sellers may be few or large.

Thus competition will be imperfect if there are only a few sellers or buyers, each of whom sells or buys a considerable part of the total output. If, further, the situation is such that any action taken by one of these small number of sellers is likely to be followed by suitable action by other sellers, it is known as *oligopoly*. Competition will be imperfect even with a large number of sellers, if buyers do not buy, on account of ignorance or some other reason, at the cheapest available price; or if the buyers regard the products supplied by the different sellers as similar but not identical. The last case is sometimes known as *"Monopolistic competition."*

When there are few sellers of a commodity, everyone of them will be able to affect the price of the product. The number of sellers may be small either because the state has restricted by laws the number of persons who are entitled to produce (as in railways, electricity, etc.); or because the sources of the supply of the product are small in number (as in the case of petroleum); or because the particular industry requires a very large initial capital outlay on plants, which fact deters more men from entering it. In industries in which the technical economies of large-scale production are very great, anyone of the producers can lower his costs by producing more; he can then sell at lower price and drive out some of his rivals. This would give rise to "cut-throat" competition among them, until there are only a few producers left in the market. Each of them will be exercising a substantial control over the supply, and will sell the product at a price higher than the cost of production. Moreover, in order to produce at a lower cost, they would have to produce a large quantity. This would increase the total output considerably, and thus cause the price to fall so much that they might be unable to cover the costs.[1]

Even if there are a large number of sellers of a commodity, competition may be imperfect, either because of the ignorance of the buyers; or because the cost of transporting it is high. If any seller is charging a slightly higher price than others, they may not be aware of it, and so will not transfer their customs to his rivals. Similarly, if the cost of transporting the commodity forms a considerable part of the price, each seller will have a semi-independent market, consisting of the consumers who live near his factory or shop. Such is the case with small retail dealers. They may charge a slightly high price without driving away their customers who would be willing to pay this price rather than go to a more distant shop involving more expenses and inconveniences of travelling. Also if one shopkeeper wants to increase his sales materially, he will have to lower his price in order to induce his existing customers to buy more,

[1] In the extreme case, there may be two sellers only and a large number of buyers. This typical situation is known as *duopoly*.

as also to attract new customers living at some distance from his own shop.

Another important reason for imperfect competition is the existence of real or imaginary differences in the quality of the product sold by each producer. By means of repeated advertisements, or by fixing brands, each producer tries to impress upon buyers, this fact that his product is superior in quality to that of others. The superiority in quality may be real or imaginary. But in so far as the buyers are convinced of the existence of these differences, each producer will have a partially independent market for his product. He can charge a slightly higher price. And if he wants to sell more, he must offer his article at a considerably low price. For such lowering of price may be necessary to induce his old customers to buy more of it, and to attract from his rivals those buyers who prefer the particular quality of the goods of his rivals.

Difference between perfect and imperfect competition.

Thus we see that when competition is imperfect, each producer possesses a certain amount of liberty in fixing the price of the product. Under perfect competition, he must accept the price which prevails in the market as a result of the competition of all his rivals. If he charges a slightly low price, he can attract all the buyers. But under imperfect competition, he can charge a slightly higher price than any of the rivals. His customers would not desert for his rivals, either because they are ignorant of the prices offered by the latter, or because of the cost of transport, or because they prefer the particular quality or taste of his product to that of others. All that may happen is that his customers would buy a somewhat smaller amount than before because of the higher price. Similarly, a small reduction in price may not increase his sales. His old customers may purchase a little more at the lower price. But if he is to attract more buyers, he may have to make a substantial reduction in price to overcome the likings of the customers of his rivals' products for the latter, or to compensate for the costs of transport. Thus each producer will affect the price of his product appreciably by selling more or less

of it in the market. In technical language, the elasticity of demand for his product is less than unity.

In imperfect competition, the price will settle at the point, where the marginal cost and the marginal revenue are equal. In order to maximise his profit, each producer will go on producing and selling so long as the extra cost of producing the additional unit is less than the addition to the total receips made by selling that extra unit. In perfect competition, the marginal revenue is equal to the price of product. But in imperfect competition, the marginal revenue will be less than the price of the product. For we already know that in order to sell more, each producer will have to reduce his price. He will then have to sell all the units (and not only the additional units) at the lower price. So what he actually gains by selling the extra units will be measured by the price that he gets for the extra units *minus* the reduction in price on the units he was selling. Suppose one producer can sell 10 units at Rs. 2 each. If he increases his output by 10 per cent, and wants to sell 11 units, he will have to lower his price to Re. 1/15/-. Tabulating the facts, we find,

In imperfect competition, the marginal revenue is less than the price.

Total output	*Price*	*Total receipts*
11 units	at Re. 1/15/- each	Rs. 21/5/-
10 units	at Rs. 2/- ,,	Rs. 20/-
1 unit		Rs. 1/5/-

If he sells one unit more, he will increase his total receipts by Re. 1/5/-. The marginal revenue of each unit is therefore Re. 1/5/-. The marginal revenue is thus lower than the price of the product. So long as the marginal cost of production is lower than the marginal revenue, the producer will produce and sell more, for he is thereby adding to his receipts. He will stop at the point when the marginal cost is equal to the marginal revenue. But marginal revenue is lower than the price. Hence he will stop producing and selling at some point before the price of his product has fallen to the level of his marginal cost. In

perfect competition, the marginal cost is equal to the price and to the marginal revenue (since the marginal revenue is equal to the price). But in imperfect competition, the marginal cost is equal to the marginal revenue, but not to the price. Output will stop before the marginal cost becomes equal to the price. The output of each seller under imperfect competition will be smaller than that under perfect competition, and the price of the product will be higher than the marginal cost of production.

In imperfect competition, the firms may not be of the most efficient size.

We have seen that under perfect competition, the number of firms will be so adjusted that in equilibrium, all firms will be of the optimum size, or the most efficient size. But in imperfect competition, that need not be the case. When competition is perfect, a firm which is of less than optimum size will have a tendency to expand. As it expands, its cost will fall, while the price that it receives for its additional products remains the same as before. But if there is imperfect competition, such a firm may not expand. It is of course true that if it expands, it will lower the average cost of its product. But it would have to lower its price in order to sell the additional output. It is quite possible that the loss due to sale at lower price may outweigh, or may just balance the gain due to lower average costs per unit. Thus the firm may not have an incentive to expand and to produce a large output. Thus in conditions of imperfect competition, the more efficient firm may fail to drive out inefficient firms from the market. If the efficient firm has to lower its price considerably in order to overcome the prejudices of the customers of inefficient firms it might prefer not to drive the latter out of the market. But under perfect competition, the efficient firms can produce and sell more without any considerable reduction in price. As they produce more, the total output will increase and the price would fall so that the inefficient firms would be unable to cover their costs. Thus in imperfect competition, the number of firms in any industry may be larger than that under perfect competition. Each of these firms may be producing an output which is less than the optimum output. The management of each firm may be

receiving a reward which is not higher than that received in similar other occupations. For example, there may be a large number of small retail shops, or sweetmeat shops in a city, each of which sells a small output, and is of less than the optimum size. None of them may be earning more than normal profits to be earned elsewhere in similar trades. Yet each shop is monopolistic in the sense that it has a semi-independent market, protected either by costs of transport, or ignorance, or the goodwill of buyers. And it may be profitable for the community if the industry is concentrated on a smaller number of firms.[1] The statement may appear paradoxical. For it seems to imply that the cure of imperfect competition is more imperfect competition. But when the number of firms is reduced each will be of the most efficient size; output per firm will be larger. The average cost and the price per unit will be the lowest possible under existing conditions of technique and knowledge.

Monopsony.

There will be imperfect competition when there are only a few buyers of a product.[2] Each of them will then be buying considerable portions of the supply and will be able to affect the price by increasing or decreasing his purchases. Usually in the purchase of finished consumer's goods, such a state of affairs is exceptional. There is normally a large number of buyers of such goods. But in the purchase of the factors of production (*e.g.*, labour or raw materials), the market may be imperfect. For example, in the sugarcane industry, growers must sell their sugarcane to the nearest sugar factory, as another factory may be situated at a great distance. Not only will the costs of transport be high, but owing to the longer period of time involved in transporting the cane to the more distant factory, the quality of the cane will deteriorate. So they may be forced to sell to the nearest factory whose owner, therefore, buys in an imperfect market. Similarly, the market for labour may be imperfect, because

[1] But it should be noted that this is not always true. If, for example, the imperfect market and the existence of a large number of firms are due to *real* differences in the quality or the type of the product, there would be no gain by reducing the number of firms.

[2] This situation has been christened as "*Monopsony*" by Mrs. Robinson. See her book, *Economics of Imperfect Competition.*

there are only a few buyers of labour of a particular grade in a locality. When an employer lowers his wage-rates, many of his employees might not desert him, not knowing that higher wages could be earned in other places. Or, they might find it costly to go to other places. The employer would also have to offer considerably higher wages in order to attract more labour from distant localities. Thus the employer will have to raise or lower wages by employing more or less labour. But as he has to offer a higher wage-rate in order to employ more labour, he will have to pay all labourers including the additional labourer at the higher rate. Hence when an employer engages an additional labourer, he adds to his costs not only the wages of that labourer, but also the increase in the wage-rate paid to all other labourers. The additional costs involved in employing one more labourer (the marginal value of labour) is thus higher than the wages paid to that worker (the marginal wage-cost). He will stop employing labour when this additional cost is equal to the extra receipts by the sale of the additional output. Thus the employer will stop employing labour when the wage-rate is still below the marginal net product of labour. In other words, the wage-rate will be below the marginal net product of labour when there is imperfect competition in the labour market. And if competition in the sale of the product is also imperfect, the marginal revenue will be below the price of the product, the wage-rate will be further below the marginal net product of labour.

Price determination under oligopoly : There is one more situation which has peculiarities. So far we have examined the case of firms selling in perfect competition, of monopoly and of certain instances of imperfect competition. In this analysis we made the assumption that what one firm does about his price will not involve any retaliation by his competitors. Where there is a large number of sellers, this is a reasonable assumption. Any action by one of them will not materially affect the sales of others, and so will not force them to retaliate by changing their prices. But the situation is different when there are only a few firms. In such a condition what one firm does about his price is of decisive importance to others. If it lowers its price to increase its

sales, its competitors may also retaliate by lowering their price so that this firm may not secure larger sales.[1] This situation is known as oligopoly.

Oligopoly may be of two types, pure oligopoly, and differentiated oligopoly. When a few firms sell a homogeneous product, but each has to frame its policy in part upon the expected behaviour of its rivals, the situation is known as *pure oligopoly*. When, however, a few firms sell similar but not identical products under the same conditions, the situation is called *differentiated oligopoly*.

In particular types of oligopoly, if one firm lowers its price, it may expect its rivals to lower their prices so that it may not be able to increase its sales. Therefore the demand for the product of the firm just below present prices is likely to be inelastic. On the other hand, when it raises its price, other firms may not do so; for the latter naturally make

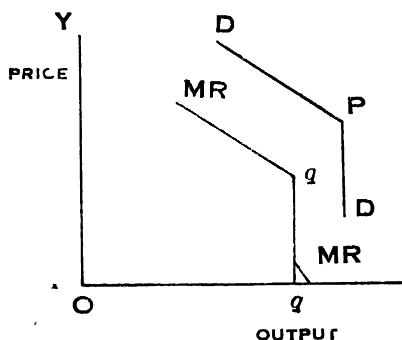


FIG. 36

large profits at the expense of the first firm by sticking to the old price. So the first firm will probably face a sharp reduction in sales when it raises its price. Therefore demand at prices above the present one is likely to be highly elastic. This fact is represented in fig. 36; and this type of demand curve is known as "kinked" demand curve. Unlike other demand curves, this one is not a continuous, sloping curve,

[1] This type of behaviour may occur when the number of sellers is also large. If there are many small firms and one or a few large firms, these firms may try to appease one another by restraining their competitive behaviour. Cf. Scitovsky—*Welfare and competition*, p. 385.

but has kink at p. Similarly, the marginal revenue curve, derived from this kinky demand curve, has a discontinuity at q.

The oligopolist does not ordinarily have any definite demand curve for his output ; the actual amount he will be able to sell depends upon the behaviour of his rivals. He is able to sell a definite amount at the current market price. At all other possible alternate prices, his share of the total market demand will depend upon the policy pursued by rival producers in reaction to any changes made by him. The oligopolist has, therefore, to conceive of a number of provisional demand curves drawn according to various assumptions about his rivals' policies.

The determination of price and output in an oligopoly is a complicated problem, depending upon the particular assumptions each seller makes about the behaviour of his rivals. Since there is a great variety of assumptions he may make, the theory of oligopoly consists of a large number of behaviour patterns and special cases. To discuss them in detail is not possible in a short compass. We shall, however, discuss one or two important cases.

In the first place, let us take the case when the rival sellers, while pursuing independent price policies, ignore the reaction of their rivals. This is likely to lead to cut-throat price competition and unstable markets for all sellers. Even if this happens, it will not endure for a long time. One of the two things will then happen. Either all but the strongest seller would be driven out of the market, or the oligopolists would recognise their interdependence and come to an agreement on price and output. They may, for example, simply agree on a fairly satisfactory price and all adhere to it in order to avoid the dangers of another price competition.

Price leadership.

Secondly, there is the well-known situation of a price leader. In markets containing a number of small firms and one large producer, the former often accept the latter as a leader, and accept the price charged by the leader, in an effort to maintain good relations with him. The large firms can then take it granted that its actions will be watched and followed by its

competitors, and it will set its price accordingly. Thus firms act as though they form a collective monopoly, and the price will probably be set at a monopolistic level.

Differentiated oligopoly.

In differentiated oligopolies, the products sold by the rivals are not homogenous. In pure oligopoly, all rivals must sell at the same price. As all of them sell an identical product, the risks of retaliation are very large in case one of them cuts his price. But when products are differentiated, each seller has to some extent a special market in which he can take independent action within a narrow range. The risk of retaliation by rivals is not so severe as the cut in price by one firm, unless it is substantial, may not materially reduce the market of the rivals. Retaliation may still be expected if the price-cut is substantial, and unless the cut is substantial, the oligopolist will not expect a considerable increase in his sales. Hence the position of a seller in differentiated oligopoly is in the main similar to that of a pure oligopolist.

CHAPTER XX

THE DETERMINATION OF VALUE : SUMMARY

We are now in a position to summarise the principles which govern the value of commodities. In determining the value of a commodity, we must, first, pay attention to the nature of competition existing in the market for the sale of the commodity. The commodity may be sold by a large number of sellers in perfect competition with each other ; or it may be sold by one seller ; or it may be sold by a few or a large number of sellers under conditions of imperfect competition. Next, we should pay attention to the period of time during which we watch the interaction of forces determining the value of the commodity. From the point of view of time, our discussion has been divided into three periods,—very short period with fixed supply, short-period with elastic supply on the existing scale of production, and long period with changing scale of production.

Value and perfect competition : Competition will be perfect in a market if three conditions are satisfied. First, there is a large number of sellers (and buyers), each selling (or buying) a very small part of the total supply. As a consequence, none of them will be able to affect the price of the product by selling (or buying) a little more or less of it.

Secondly, products sold by different sellers must be similar and identical in nature and quality, so that buyers are indifferent whether they buy from this or that seller.

Thirdly, buyers know the prices charged by different sellers, and always attempt to buy at the lowest possible price.

If competition is perfect, each seller will, therefore, be able to sell additional quantities of the commodity at the current market price. This follows from the first condition. In other words, the demand curve facing each seller is perfectly elastic.

In the very short period when the supply of a commodity is fixed, the price, known as the *market price,* will be

governed mainly by the conditions of demand. Since the output has already been produced, the cost of production of the output will have practically no influence on the determination of the market value. But unless the commodity is extremely perishable, sellers can keep stock of it for future sale if they expect a rise in the price in the future. If they expect that the price is going to rise above the present market price, they may withhold a part of the supply. As a result, the present supply will decline and the market price will tend to rise. Thus the market price is also tied to the short-run normal price.

Market price.

If the period of time is such that existing firms in the industry is in a position to increase their production upto the maximum capacity of their plants, or to decrease it if necessary, the price that will prevail during such a period is known as *the short-run normal price.* The sellers can then produce and sell additional units of the commodity if they find that this will increase their profits. When a seller produces additional units of a commodity, he will have to incur additional expenditure in buying raw materials, paying the wages of additional labour, etc. This additional cost of producing one more unit of the commodity is known as the marginal cost of production. Similarly, when the seller sells the additional unit in the market, his total revenue (*i.e.*, the total sale-proceeds) will increase by a certain amount, depending upon the price at which the commodity is sold. The additional revenue obtained by selling an extra unit in the market is known as the marginal revenue. So long as the additional expenditure incurred in producing the extra unit of the commodity is less than the additional sum of money obtained by the sale of that unit, the seller will increase his profits by producing and selling the extra unit. In other words, so long as the marginal cost of production is less than the marginal revenue from the sale of the commodity, it will pay the seller to produce and sell. But as he proceeds to turn out more units of the commodity, the marginal cost of production will rise until it becomes equal to the marginal revenue. The seller of the commodity will stop at this

Short-run normal price.

point when his profits will be the maximum. If he produces more units, the marginal cost of production will rise still further, and will then be higher than the marginal revenue. Since the additional cost of one more unit is more than the additional revenue obtained by selling the units in the market, the seller will be undergoing losses on this unit. Thus the seller will produce an output whose marginal cost of production will be equal to the marginal revenue. Under conditions of perfect competition, each seller is in a position to sell additional units of a commodity at the current market price. Therefore, the marginal revenue under perfect competition will be equal to the price. Each seller will then produce an output whose marginal cost of production is equal to the price.

From the side of consumers, an individual will buy the commodity so long as the marginal utility of the commodity is more than the price. But as he buys more and more units of the commodity, the marginal utility tends to decline until it becomes equal to the price. Thus each buyer will buy that amount of the commodity whose marginal utility is equal to the price.

Price will be equal to both the marginal cost and marginal utility.

Under conditions of perfect competition, the price of a commodity will, therefore, tend to be equal to the marginal cost of production on one side and to the marginal utility on the other side. We can determine the cost curve of the total output on the basis of the marginal cost curves of all sellers, and the damand curve for the total supply may also be found out by adding together individual demand schedules. Price will settle at the point at which the demand curve for the total output intersects the total cost curve for the industry.

If we take a sufficiently long period of time either more firms may enter that industry, or some of them may drop out of production, and each of those firms may be in a position to change their scale of production by installing more or less machines or plants. This is the case of *long-run normal value*. During the long period, if the demand for the commodity is very high and existing firms are earning large profits, they may extend their production by installing more

machines or by increasing the scale of their operations. Or, many new firms may enter that industry. If the demand is low, and profits are small or absent, many firms may give up their business and go to other lines which yield better prospect of profits, or firms may shut down some of their plants, and produce on a lower scale than before.

Long-run normal value.

How will value be determined in the long period? Here we shall have to take account of the long-period demand curve for the industry and the long-period marginal cost and average cost curves of the different firms. In the short-period, each seller will produce upto the point at which his marginal cost is equal to the price. Now this price may or may not be equal to the average total cost of production. If the price, though equal to the marginal cost, is higher than the average total cost, the seller is earning large profits in the aggregate, since the average total costs include the normal earnings of management. Lured by the existence of such large profits, either more firms will enter that industry or the existing firms will extend their scale of production, or both the two factors will be simultaneously in operation. As a result, the total supply of the commodity will increase, and given the same demand, price will tend to come down until it is equal to the average total cost. Conversely, if the price is lower than the average total costs, the firm is not earning normal profits. So it will tend to cut output by shutting down some of the plants, and some of the firms, especially those in a weak financial position, may drop out of business. As a result, supply will fall off, and the price will rise to the level of the average total cost. Thus in the long run, price of a commodity will be equal to both the marginal cost and the average total cost of production of a firm. The marginal cost curve cuts the average total cost curve at a point where the average total cost is the minimum. Thus each firm will, therefore, produce at the lowest cost, and will be of the optimum size, consistent with its own resources and organising capacity.

Value in the absence of perfect competition : Instead of many sellers, a commodity may be sold by one firm, which has not to face the competition of substitutes. The situation

is known as *monopoly*. Since the commodity has no substitutes, its demand cannot be perfectly elastic. In other words, the demand curve facing the monopolist will not be a horizontal straight line as in perfect competition, but a line sloping downwards on the right.

Monopoly value.

Like the seller under perfect competition, the monopolist will also try to maximise his profits, and this will be possible only when his marginal cost of production is equal to the marginal revenue. The principle determining value under monopoly is, therefore, the same as in perfect competition. There is, however, a difference. In perfect competition, marginal revenue is equal to the price. But since the monopolist is the only seller, he will not be able to sell additional units at the same price as before. As he proceeded to sell additional units, the price will fall, and so the marginal revenue will be less than the price. Hence under monopoly, price will not be equal to the marginal cost of production (which is equal to the marginal revenue), but will be higher than that, and the output produced by him will be lower than that of the competitive sellers.

Imperfect competition.

Similarly, under conditions of *imperfect competition,* a producer will not be able to sell additional units at the same price as before. So the marginal revenue will be less than the price. Each producer will produce upto the point where the marginal cost of production is equal to the marginal revenue, and the price, being higher than the marginal revenue, will also be higher than the marginal cost of production.

CHAPTER XXI

SPECULATION

What is speculation? Speculation comprises those activities which are based on an intelligent anticipation of coming events. It means the purshase or sale of a commodity with a view to earning profits from future changes in prices. When a speculator anticipates a rise of prices in the future, he buys with a view to selling afterwards at a profit. Similarly, when he foresees a fall of prices, he will at once sell with a view to buying in the future at lower prices. He thus anticipates all changes in prices, and hopes to profit by them. It is, however, not his business to hold the goods permanently, or to manufacture them. He will perhaps never touch the goods. He is a dealer, not in goods,but in risks.

Speculation concentrates the risks of business on shoulders best able to bear them.

Modern productive organization is inherently risky. In primitive communities, there were practically no risks. Each man produced for himself and consumed what he produced. But with the progress of society, production has become more and more round-about, and has to be carried on in anticipation of demand. The risks of business have greatly increased. Long before the final output can be placed on the market the demand may change for the worse ; or there may be such a change in the supply of the commodity as will falsify his anticipations. At every step, therefore, in the productive process, great risks have to be borne. Speculation concentrates these risks and causes them to be borne by those best able to bear them. In this way, speculation renders very useful services to the society.

Speculation and gambling.

Speculation is different from gambling. Gamblers are persons who try to make a profit by assuming *unnecessary* risks. Often they themselves deliberately create the risks which they bear. For example, it is, of course, uncertain whether England or Australia will win the "test". There is uncer-

tainty, but none need bear it. The assumption of such risks is entirely unnecessary for carrying on productive activities. But gamblers will often gamble on the results of test matches. They often bet on the fact whether there have been two inches or three inches of rain on a particular day. There is practically no risk here ; it is only created by the gambler to gain or lose money. A speculator, on the other hand, assumes *necessary* and *natural* risks. For example, the price of jute may rise or fall six months hence. There is a risk which must be assumed by somebody if production is to run a smooth course. Lastly, the gambler does not in any way contribute to production. Speculation, on the other hand, performs a very necessary economic function.

Conditions favourable to the growth of a speculative market : Speculators deal either in commodities, or in securities. Anything whose future is uncertain may become the object of speculative activities. But there are certain special circumstances, which favour the growth of a speculative market. *First,* the commodity must be a staple product with a large and regular demand. *Secondly,* it can be standardised *i.e.,* suitably graded according to quality. *Thirdly,* it must be properly cognisable, *i.e.,* capable of ready definition and measurement. Many commodities satisfy these tests. The stocks and securities, in particular, exhibit these characteristics in a pre-eminent degree. And this explains the almost universal organization of stock exchanges. There are also other special reasons why some commodities become the object of speculative activities. *Fourthly,* when the supply of a commodity is very uncertain, and beyond human control ; and also when the supply comes into the market, not regularly throughout the year, but irregularly during a particular season, it is apt to show great price-fluctuations. *Lastly,* the demand for these commodities, on the other hand, may be mostly regular and continuous. The important raw materials of industry, like cotton, wool, etc., and food-stuffs like wheat, are examples in point. Their supply is beyond human control. Man may sow or plant as many acres as he likes, but the actual amount of crops will be determined by the weather conditions. Not only that, but the whole supply of such commodities is placed

on the market immediately after harvest, while the demand for them is, more or less, regular and continuous. Hence their prices are likely to fluctuate extremely. A short wheat crop may drive its price to undreamt-of heights; while a bumper crop may cause the price to fall very much. In order to lessen the risks of such price-fluctuations, various produce exchanges have been organised.

Organization of speculative markets : A Stock exchange is a place where shares and securities are bought and sold. Shares satisfy all the conditions required for a perfect market. They are easily cognisable, and one share is exactly like another. A stock exchange consists of jobbers and brokers. The jobbers are real speculators in stocks, and they are always ready to quote a buying or a selling price. Brokers come into contact with the public who want to sell or purchase shares and furnish them with quotations of selling and purchasing prices from jobbers. They are really middlemen who earn commissions; the real speculators are the jobbers. The chief transactions on the exchanges may be shortly described as follows:

Organization of stock exchanges.

If the speculator thinks that the price of a commodity is high, and is going to fall, he will "sell short" *i.e.*, he will contract to deliver at a future time such goods as are not yet in his possession. He may make profits out of this transaction in two ways. Either he will purchase the goods he had contracted to deliver on that future date at the lower price, or he will make a "covering" contract or a 'hedging' contract just now; that is, he will arrange with some other dealer to purchase at the same time the goods at a somewhat lower price than that at which he has contracted to supply. In the opposite situation, that is, when the price is low in the estimation of the speculator, but he thinks it will rise in the near future, he will 'buy long', *i.e.*, he will purchase a larger quantity of goods than at present required and when the goods are delivered, he will sell at a profit. He will achieve the same result if he makes a 'realizing' or 'liquidating' sale of the goods at a higher price to be delivered at the same time. The speculators who contract for 'selling short' are known as *'bears'* because by their very operations they help

to pull down the price; and the speculators who contract for 'buying long' are described as *'bulls'*, because by their speculation they pull up the prices.

When a substantial period of time intervenes between a present contract and the future delivery, the transaction is known as a 'future'. Dealings in futures seldom lead to an actual delivery of the produce. What really happens is that by bringing together those who actually wish to receive and those who wish actually to deliver the produce, the transaction is completed. Thus we find two classes of buyers in futures. First, come those manufacturers who buy to meet their future needs for particular grades of an article. When the time comes for the fulfilment of the contract, they buy the grade which they require and sell the grade which they acquired through the future contract. The loss in one transaction, if any, is offset by gains in the other. What remains to them is not speculative profit, but the profits of manufacture. The other group of buyers consist of those who do not want the produce to which the futures refer, but are trying to make a profit out of buying at a low price and selling at higher prices. They pocket the difference in prices and make speculative profits.

Organization of future's market or produce exchanges.

Economic functions of speculation: The essential services that speculation renders to the economic organization are the assumption, and to some extent, the reduction of risks, and the lessening of price fluctuations. One of the essential characteristics of the modern productive organization is that it is carried on long before in anticipation of demand. By the time cotton crops are sown and harvested, cotton yarns spun and piece-goods woven, the demand may fall or change in such a way as to spell disaster. The manufacturer, who has bought his raw materials, and who is expecting a handsome profit, might see his profit turned into loss on account of a fall in the price of raw materials. All types of productive activity, therefore, involve the bearing of much risk and uncertainty. It is the special function of speculators to assume these risks, and thus to relieve manufacturers of a great amount of uncertainty-bearing. The manufacturer who has bought a wheat future may safely

concentrate his energies on producing flour. Though the price of wheat may fall by the time he has turned out the finished product, his loss on this account will be made up by his corresponding gains from the futures. Moreover, when a great uncertainty prevails, productive activity is curtailed. The speculator, by assuming the uncertainties of the economic organization, helps to increase production.

They promote the true equilibrium of demand and supply.

The fundamental effect of speculation is to promote the establishment of equilibrium between supply and demand. When speculators anticipate a shortage of supply in the future, and hence a rise in prices, they buy at once. Prices rise at once as a result of their buying. Higher prices check consumption. Present consumption is curtailed, and some supply is withheld from the present market. As this amount is added afterwards to the future supply, the rise in prices will be less in consequence. Similarly, when a speculator expects the price to fall, he will sell at once. Present prices fall, and consumption is stimulated, so that afterwards, the fall in price will not be severe. In this way, speculation prevents sudden fluctuations of prices, and smooths the course of price movements. The passing and fitful events are not allowed to exercise an undue influence on price ; and value is determined by the fundamental long-period causes. In this way it also helps to secure the proper adjustment of demand and supply. The daily market price tends to conform to the seasonal market price and the seasonal supply price becomes such as to dispose of the whole seasonal supply. As speculation lessens price fluctuations, it promotes the smooth course of exchange and consumption. Consumers get their commodities at a steady price ; hence consumption becomes steadier.

Besides freeing businessmen from the assumption of risks as regards price movements, speculation helps production in another way. Any future demand for an article is foreseen by the speculator and he begins to buy it at once. This raises its prices and serves as a guide to producers who then begin to manufacture more of it. The speculator who buys cheap and sells dear improves the allocation of resources between different products.

Similarly, investment of capital in commerce and securities is guided by speculation. Stock-exchange speculation promotes investment. Speculators subject all undertakings to expert investigations which are quite impossible for the small investor. A steady price on the stock-exchange implies a safe and sound condition of a concern. Whenever any industry becomes profitable, speculators will long before anticipate that and offer high prices for the stocks of such an industry. Thus the price list of securities serves as a responsible guide for investors under ordinary conditions.

Stock exchanges promote investment.

Dealings in produce exchanges confer important benefits upon actual producers of an article. Suppose, for example, an Indian miller has ordered a certain quantity of wheat from Canada at the price quoted in the wheat market. He at once sells in the home market an exact quantity of wheat to be delivered at the time when he expects his wheat to reach him. If the price of wheat falls in the meantime, the miller has then got to sell flour made of dear wheat at a lower price. He undergoes loss on the sale of such flour. But when the time comes for delivering the wheat future, he buys the cheap wheat in the market and delivers it to the merchant with whom he made contracts at the higher rate. Thus the previous loss is offset by the gain on the future transaction.

Benefits of produce exchanges.

Perfect speculation tends to destroy itself. If speculators are perfectly wise, they will make a correct forecast of the changes of prices. And as a result of their action, these price fluctuations will be eliminated altogether. So in the end prices would cease to fluctuate. When prices do not change there would be no necessity for speculation.

Illegitimate speculation : All these benefits arising from speculation presuppose expert knowledge and honest dealings. But there are outsiders and manipulative speculators. Once a commodity is standardized, anybody can deal in it. The public, lured by the profits of the speculators, begin to dabble in the speculative market. They are losers as a class as they do not possess the knowledge and shrewdness of the expert speculator. Another class of illegitimate speculators is the manipulative or aggressive speculators.

They create a false opinion as to the general conditions of demand and supply. A clique, for example, will lead the market to believe that they are working for a fall and will make a great show of selling their goods, while they are really buying quietly by indirect means much larger amounts than they are selling. Ultimately they may control the whole or most of the supply of a commodity and can then dictate monopoly prices. Such speculations are instances of corners. Instances of successful corners are, however, very rare.

If there is a dabbling by outsiders fluctuations in prices may become more violent. They are prompted by latest rumours and become panic-stricken on the slightest cause of fear; they sell their commodities and securities when expert speculators would hold them; they buy commodities and stocks when expert speculators would sell them. By their very operations the price fluctuations become more violent than before.

Regulation of speculation: The evils of illegitimate speculation set forth in the previous section have prompted the discussion of the question of the regulation of speculation. On the necessity of such regulation, authorities in every country are unanimous. But the remedies suggested are inadequate. One remedy against speculative gambling is legislation. But there are loop-holes in all legislation and the ingenuity of the lawyers is there to help speculators. Already laws in many countries make void any transactions which are sales in form merely. Most gambling often takes place in connection with future delivery. If dealings in futures are prohibited this kind of gambling may be checked; but the advantages of dealing in futures are too important to be highly brushed away. So "the most effective remedy," says Taussig, "would be a better moral standard for all industry and an arousal of public opinion against all kinds of gambling."

The evils of stock exchange speculation can be remedied through a revision and better enforcement of the rules made by the exchanges for themselves. If the industries can lessen price fluctuations through greater regularity of production, there will be less sepculation. Public opinion can taboo the

outside speculators. All these are indirect remedies and take a long time to materialise.

Lerner[1] has suggested that the evils of aggressive speculation can be best tackled by what he calls 'counterspeculation'. The government should set up an agency which should make an estimate of proper prices, and use its resources to peg actual prices to these levels.

[1] *The Economics of Control,* pp. 96-7.

CHAPTER XXII

OLDER THEORIES OF VALUE

Labour theory of value : The labour theory of value is perhaps the oldest theory of value. Its chief exponents have been Adam Smith, Ricardo and Karl Marx. In this section, we shall be treating of the theory of the first two economists while the next section will be devoted to an examination of the Marxian theory of value.

Briefly the theory states that the value of a commodity in the long run is determined by the amount of labour embodied in it. Smith and Ricardo did not deny that a thing must possess value-in-use *i.e.*, utility. But utility was not the cause of value. Relative values differed, not with relative utilities, but with relative amounts of labour that each embodied. And Adam Smith clinched the issue by pointing out the paradox that things with greatest value-in-use, (*e.g.*, water) had often the least value-in-exchange. It should be noted here that Smith was not a rigid upholder of this theory. In his opinion such a theory was only true in primitive times. But even then he admitted that highly 'esteemed' labour would command a higher value. But in modern times after 'stock' and land had been appropriated such a theory was non-applicable. In its place, he substituted a form of cost of production theory. Ricardo, however, believed that even in modern times, value was determined by the relative amounts of labour.

The theory is unsatisfactory on many grounds. *First,* what is exactly meant by 'labour'? Labour may be of many grades, of many kinds—manual, mental, skilled, and unskilled. How can we compare skilled with unskilled labour? If the different kinds of labour cannot be reduced to a common measures, how can we compare relative amounts of labour and determine their relative value? Moreover, the amounts of labour vary with the efficiency, and intensity of work. How are we to find a common measure between them? *Secondly,* suppose two things, a pair of shoes and a

piece of cloth are sold at the same price, are we to say that they embodied equal amounts of labour? Certainly not. *Thirdly,* what about the misdirected labour? Labour devoted to the production of things that cannot be sold. The labour of cutting a suit, which, when finished does not fit, has nothing to do with its value; in fact, its value is nil. *Fourthly,* according to the theory, once labour produces a commodity, its value cannot change, being fixed already by the amounts of labour used up. But in fact, values are constantly changing. Hence labour cannot be the cause of value. *Lastly,* the theory fails to explain the value of things, which are non-reproducible, like great works of art, etc. The truth is that labour is only *one* of the elements, which affect the supply, and therefore the value of a commodity. Other things being equal, a thing which required more labour to produce may be higher in price than the thing which required less labour. That is all. But in real life, other things are never equal, and it is better that the theory should be finally discarded.

Marxian theory of value : Karl Marx was the founder of the modern socialist movement, and he used the labour theory of value to assail the capitalist system. He studied at the British Museum, and so was particularly influenced by the British economists, especially by Ricardo.

Value is determined by the amount of 'socially necessary labour'.

According to him, "the value of a commodity is determined by the quantity of labour expended during its production." He did not exactly deny that the thing must also possess utility, but he met the situation by citing Adam Smith's paradox about the disparity between value-in-use and value-in-exchange. *Value, according to him, was determined not only by labour, but belonged wholly to labour.* But a part of the value was always confiscated by the capitalist as interest, rent, profit, etc. Hence Marx's furious denunciation of the capitalist system. While the purpose for which he used his theory does not concern us, yet it may be pointed out that he completely ignored the important contributions to value made by the labour of organisers and inventors.

His theory too suffers from all the defects of the labour theory. Is there a common measure among the different kinds of labour which we can use as a standard of value? After considering the claims of "labour time", of 'unskilled simple labour,' he finally selected 'simple abstract, human labour', or 'socially necessary labour' as his standard. But that does not carry us anywhere. What is socially necessary labour? To determine it, we must go to the market and see how much of other commodities can be exchanged for it. But that is to admit the influence of utility. Can we say that because a weaver is paid twice as much as a coal miner, the latter's labour, as regards social necessity, is in the ratio of 1 to 2 with the former? The term, 'socially necessary', thus begs the whole question. Marx, however, boldly faced the problem of misdirected labour. Such labour, he declared, would get no value at all ; a perfectly justifiable statement, but one the justness of which he would find it extremely difficult to convince the workman on the pay day. These difficulties have thus led to the shelving of the theory even by the socialists.

Cost of production theory : The theory states that value is *determined by the cost of producing the thing.* It is different from the labour theory in that it reckons other elements, besides labour, in the cost of producing a thing ; *e.g.,* interest and ordinary profit. In course of time, the labour theory of value was found to be inadequate. In trying to recast the theory, Senior added to the labour-cost the remuneration for another factor of production, which he called 'abstinence'. Mill later added 'risk' as a cost element, and at his hands, the cost of production theory reached its full development.

Value, according to Mill, was determined in the long run, by the cost of production, which included the wages of labour, the interest on capital and the ordinary profit of entrepreneurs. Market value oscillated above and below this figure. If, at any time, the price rose above cost of producing one unit, there would be a tendency towards increased production, increased supply, and finally falling price, until it would again become equal to the cost of production. Conversely, if the price fell below this figure, less would be

produced, and the price would again rise. This competition would always keep the price equal to the cost of production in the long run. Rent, of course, was not a part of cost, since it was considered to be a differential surplus.

This theory is also inadequate to explain value. *First,* it ignores the important influence of utility. Cost of production, by itself, cannot give rise to value; there must be utility before there can be value. If a man incurred heavy cost in producing a thing which was not wanted, he would not be entitled to get any remuneration. "A country in which the cost of production invariably fixed the value of a thing would be a businessman's paradise, because he would never be punished for his mistakes; we ignore half of our problem if we take utility for granted".[1] *Secondly,* the theory fails to explain the value of non-reproducible things. *Thirdly,* cost of production of a thing, once produced, will remain fixed and unchangeable. But values fluctuate constantly. Values may rise or fall, irrespective of changes in the cost of production. Hence the theory does not furnish a satisfactory explanation of value. *Fourthly,* the theory fails to explain the value of joint products, like wool and mutton, where the separate cost of production cannot be determined accurately. *Fifthly,* the expression, 'cost of production' which equals value may be only the prime costs. *Lastly,* cost of production is itself dependent on value. The higher the price, the greater the supply; the greater the supply, the higher or lower will be the cost per unit. Cost, value, and demand are mutually related. Hence it is wrong to say that cost of production *determines* value.

It ignores the influence of utility.

Cost is itself determined by value.

Utility theory: The theory states that value is determined by the utility of a commodity. Things which possess greater utility will command a higher value in exchange for the things which possess lower utility. A refinement of this theory is the *marginal utility theory.* Value, according to this view, is determined not by utility, but by the marginal utility; *i.e.,* the utility of that unit which the consumer is

[1] Clay. *Economics for the General Reader,* p. 268.

just induced to buy. Jevons in England was a great exponent of the theory.

Utility is also itself dependent on value.

Mere utility cannot give rise to value. There must also be some limitation in supply. Otherwise, in spite of usefulness, nobody would pay anything for that commodity. Similarly, things which possess the greatest utility, *i.e.*, usefulness, like water, possess in many cases the lowest value. The marginal utility theory does not, of course, suffer from these defects. The mistakes of these theories lay in the fact that they made utility, or marginal utility the cause of value. But marginal utility does not determine value. It is also determined by value. The greater the supply, the less the marginal utility. But the supply of a commodity depends on its price. The truth is that neither value, nor supply, nor demand can be called the cause of the others. Each influences the others, and is, in its turn, influenced by them.

The theory is right in so far as it bases value on human wants. The concept of marginal utility has also provided as important tool in economic theory, in that it skilfully blends two important influences on value,—utility and scarcity. But the theory is wrong in so far as it says that marginal utility governs value. It does not. Value only *measures* marginal utility. That is all.

CHAPTER XXIII

PRICING OF THE FACTORS OF PRODUCTION

So far we have studied the way in which the value of commodities is settled under the influence of demand and supply. We shall now examine the principles which govern the determination of the prices of the services of the factors of production. This is usually known as the theory of distribution in which economists have studied the division of the national income of the country among the various factors of production. There are as many shares as there are factors of production. The share of land is called 'rent'; that of labour, 'wages'; that of capital 'interest' and that of enterprise as 'profit'. Thus in this and the subsequent few chapters we shall discuss the way in which the national income of the country, produced by the various factors of production, is distributed among the co-operating factors. It should be noted that the theory of distribution does not deal with the problem of *personal* distribution, *i.e.,* how the income of each individual is determined. It deals with *functional* distribution, *i.e.,* how the income of each factor is determined.

The value of a factor of production is determined, like the value of any commodity, by the conditions of demand and supply. The question for further analysis is, what determines the demand and supply of factors of production? We propose first to study the demand of a firm for a particular factor of production.

The demand of a firm: marginal productivity: To what extent will a firm want to engage the services of a particular factor of production? In the theory of value for consumer goods, we have seen that a consumer will demand a commodity upto the point at which its marginal utility is equal to its price. Similarly, a firm will go on employing more and more units of a factor until its marginal product is equal to its price.

Just as the marginal utility of a commodity to an individual is the utility of that unit which he is just induced to buy at the current price, so the marginal productivity of a factor is the value of the product of that unit of the factor which the employer finds it just worth employing at its existing price. It is equal to the value of the additional product which an entrepreneur obtains when he employs an additional unit of that factor, the supply of all other factors remaining constant. The marginal net product is thus the addition to, or the subtraction from the value of the total output of a firm when a very small unit is added to, or withdrawn from the supply of a factor, provided that the organization of the firm is properly adjusted to the changed supply *i.e.*, it is organized in the most economical manner when the supply of a factor is (say) 100 units, and also when the supply is 99 units or 101 units. In this way, by adding one unit to, or taking it from, the total supply of that factor, while keeping the supply of other factors constant, we can determine the marginal net product of each factor. And as in theory at least, all units of a factor are interchangeable, the productivity of this additional unit settles the prevailing rate that is paid to all other units of that factor.

How marginal productivity is determined.

Just as the concept of marginal utility follows from the law of diminishing utility, so the concept of marginal productivity follows from the law of diminishing returns as applied to the organization of a business. As more and more units of a factor are applied to a business, supplies of other co-operating factors remaining constant, output may increase for the time being more than proportionately. But soon a point will be reached when the addition of a further unit of that factor will increase the output less than proportionately. If we go on adding more and more men to a factory, a time will come when the addition of more men will not increase the product proportionately. As an employer adds more and more units of a factor to his business, the additional product due to that factor goes on diminishing. A time will come when the productivity of an additional unit just balances the price that he has to pay for it. This unit is the marginal unit of that factor, and the value of its pro-

ductivity settles the remuneration of all units of that factor. He will not employ any further unit, for the value of the product of this unit will be less than the price that he has to pay for its services.

The principle of substitution.

In a freely competitive market, where many firms are producing, we can assume that the influence of a particular firm on the prices either of the product, or of the factors of production will be so small as to be negligible. The particular employer must accept the market price for this product. So also the price that he will have to pay for any unit of the factors is fixed for him by the rate that the factors might have earned when employed by another entrepreneur, or in another industry. With the prices of factors thus given, the employer will always try to combine various factors in such a way that his costs of production are the minimum possible. He will continuously vary the quantities of the factors that he uses, until the price that he has to pay for each unit of them will just be equal to their marginal net products to him. If he thinks that by employing more labourers, he can obtain an output that is greater than their wages, he will employ the labourers. He will employ additional capital if he thinks that the addition to the total product will be more than the expenditure on account of interest. Similarly, he will use more of labour, and less of capital and land, or more of capital and less of land and labour, or more of land and less of labour and capital, if he thinks that thereby he will minimise his costs. Thus he is constantly giving effect to the principle of substitution. He is substituting and combining land, labour and capital in such a way that the increase of the product due to the employment of the additional units of any factor will be just equal to the price that he has to pay for them. If the net product of any factor is less, or more than the price, he will be under an inducement either to contract or to expand the use of that factor. Hence in order that equilibrium may exist in the size and the methods of production of a firm, the necessary condition is that the value of each factor of production will be equal to its marginal net product. The share of each factor will, therefore, in equilibrium, be determined by its marginal productivity.

This is, in short, the theory of marginal productivity. As we have seen, it rests upon the following assumptions. *First,* it assumes that all units of a factor are homogeneous, so that we can substitute the various units indiscriminately. *Secondly,* the different factors, though co-operating with each other in the production of a commodity, can yet be substituted for each other in the sense that at the margin, we can use either more land and labour, or more labour and less land and capital. Hence, *thirdly,* it presupposes the possibility of a continuous variation of the use of the factors. *Lastly,* it is based on the law of diminishing returns as applied to the organization of a business.

Assumptions of the theory.

The theory can be applied to explain rent, interest, wages and profits. If an entrepreneur cultivates more and more plots of land with a fixed amount of labour and capital, the total produce will increase at a diminishing rate. The rent of a fixed plot of land, assuming all plots to be equally fertile will tend to equal the marginal productivity of that plot. The marginal net product of capital is what the whole industry produces when one unit is added, minus what it can produce when that unit is taken away, provided in both cases, the supply of other factors remains constant, and provided the industry is organised in both cases in the most appropriate way. The interest on capital will tend to equal this net product. Wages will tend to equal the extra product that will result from the employment of an additional labourer, other things remaining the same. *Lastly,* profits, or the shares of an entrepreneur are the amount which the community is able to produce with his help over and above what it could produce without his help.

The theory as applied to explain rent, interest, wages and profits.

The theory has been subjected to a great deal of criticism. A most common criticism is that advanced by Taussig, and also by Davenport and Adriance. In their opinion, every product is a joint product, and cannot be separately ascribed to either capital or labour, or land. It is impossible to isolate and measure the 'specific' product of each of the factors. As Carver puts it, "you cannot un-

There is a joint product, but no separate product of any factor.

scramble the eggs." The product is an inextricable mixture of different factors. But this misconceives the use of the marginal productivity theory. When we say that the marginal net product of a factor is this, we do not mean thereby that this net product is due solely to that factor. We merely *impute* that product to that factor. There is no other way, except this, of measuring the services of factors used jointly in production. It is merely a case of joint demand, and the same situation also appears in the case of consumer's goods like butter and bread. There is no more special difficulty about separating the productivity of labour, or capital on the ground that it is always associated with other factors, than there is about determining the utility of butter, because it is always demanded with other goods.

Secondly, another criticism of the theory has been stated by Wieser, and the same attack has been made by Hobson. The marginal net product cannot afford a good measure of the services of a factor, because when one unit is withdrawn from production, that would so disorganise the whole business that productivity of other agents will be considerably diminished. Hence the amount by which the total output will diminish when the marginal unit is withdrawn will be much larger than what can be imputed to that unit alone. Hence follows the paradox that the sum of marginal net products of all factors, as determined separately according to the theory, will be greater than the actual total product,—an obvious absurdity. The error in this line of reasoning lies in fixing attention upon a small business organization and large units of factors. But generally the actual size of the business is so large, and the ordinary units of the factors are so small that the withdrawal of one unit of a factor will not affect the productivity of other factors appreciably. Theoretically of course, the units must be infinitesimally small. But the error, or the difficulty resulting from this belongs to what Marshall calls, "the second order of the smalls", and hence may be neglected.

Thirdly, the opposite criticism is that answered by Wicksteed. The sum of the marginal net products of all factors will be *less* than the total product, thus leaving a surplus. Wicksteed disproves this criticism by assuming that

the proportionate increase of all the factors will increase the quantity of the product in the same proportion. That is, he assumes constant returns; but this assumption is not always valid, and introduces certain difficulties.

Fourthly, another serious difficulty with regard to the measurement of the marginal net product is that the marginal productivity of a unit of a factor to a particular firm will be considerably less than that to the industry as a whole when there are economies of large-scale production. For, a greater division of labour proceeds as an additional unit is made available to the industry. When the increase has worked its full effect, that is, when the whole organization of the industry has been adjusted to the new supply, it is quite possible that the marginal productivity of a factor to individual firms is less than that to the industry as a whole. Thus so far as production takes place under increasing returns, the determination of the marginal net product is surrounded by a margin of doubt.[1]

Fifthly, Hobson denies the possibility of variations in the use of the factors. According to him, actual technical conditions of a business, and the existence of fixed capital, like machinery, etc., dictate the proportions in which factors are to be used. There are many machines which will require the services of only one labourer. The employment of two labourers will be useless under such circumstances. The combination of different factors is thus pre-determined by the technique of the business, just as the proportions of the ingredients for a cake are rigidly fixed by the recipe. Hence unless we can vary the use of a factor, we cannot determine its net product. But in general, there is an infinite possibility of varying the proportions in which different factors can be combined. Progress in business organization is really possible only because such variations are possible. Moreover, if we take a long period, the existence of fixed capital introduces no serious difficulty regarding the possibility of variation in the use of factors. For in the long period, there are no supplementary costs, and the machines have to be either

[1] Joan Robinson. *Economics of Imperfect Competition.* p. 327. Also Pigou. *Economics of Welfare.* Hicks. *The Theory of Wages.* Appendix.

renewed, or replaced by other factors. Hence it is not appropriate to deny the possibilities of variation.

Lastly, a serious criticism of the theory is that it takes the supply of factors as given, and then explains why they are demanded. The factors are demanded because of their marginal contribution to employers. But demand alone cannot explain the value of anything, much less of a factor of production. The supply of factors is not fixed, but is elastic to a considerable degree, being dependent, for example, on the remuneration paid to them. We cannot assume that the rate of interest will not influence the supply of capital, and thus affect the net product of capital. The marginal net product is thus a variable quantity depending on a great number of factors; and for this reason Marshall admits that "the doctrine throws into clear light the action of *one* of the causes that governs wages."

The theory ignores influences acting on the supply-side.

The marginal productivity is thus an important influence determining the remuneration of factors of production. It should be noted that the theory only states what employers can pay to the factors. But in actual life, there is no perfect competition as is assumed in the theory. There is a continuous friction in the economic system which prevents proper adjustment between interest, rent, wages and marginal net products. But a continuous maladjustment will set up tendencies towards removing the discrepancy.

The theory ignores the influences acting on the supply-side.

Lastly, the theory of distribution does not carry with it any ethical justification. The marginal productivity theory seems to imply that because factors get what they produce, the present distribution of income is just. But it should not be forgotten that the market-value which tends to equal the marginal net product bears no necessary relation with the social service. Hence the theory should not be applied to justify the present distributive system.

CHAPTER XXIV

RENT

The meaning of rent : The ordinary use of the term "rent" means any periodic payment for the hire of anything, such as carriages, pianos, buildings, etc. In its usual sense, it means the payments made by tenants to the landlord for the use of a building, or of a firm. But this makes no distinction between the income from the use of land and the return from the investment of capital in land. Only the former is to be called rent in Economics, and the latter is interest. Economic rent, therefore, is the payment for the services of land in production.

Gross rent and rent proper.

The rent that is usually paid by a tenant, *i.e., gross rent,* includes (*a*) a payment for the use of land as such, *i.e.,* economic rent; (*b*) a return on the capital invested in the building or other improvements *i.e.,* interest, and (*c*) a payment for the services of the landlord or his agents in supervising the investment in land and building *i.e.,* wages. It may also include some payment on account of the risks which the land-owner might have borne in developing the land.

Ricardian theory of rent : The classical theory of rent is usually associated with the name of David Ricardo, though it should be noted that the theory was stated in a crude form by other writers before him According to him, "rent is that portion of the produce of the earth which is paid to the landlard for the original and indestructible powers of the soil." All lands are not equally fertile ; there are inherent differences between different plots of land. Rent arises because of the differential advantages in production possessed by superior lands over inferior lands.

Following Ricardo, let us suppose that a batch of settlers go to a new country, and begin to cultivate the lands. At first, they would cultivate only the best lands. As long as there is a plentiful supply of best lands, nobody would pay anything for land. The produce that is raised on the best

lands is sufficient to meet the demand of the settlers. That community will not pay any rent, because nobody will pay anything for an article whose supply is unlimited. Let us next suppose that another batch of settlers go to the country. The remaining best lands would soon be cultivated. But the total produce that is raised on the best lands may not be sufficient to satisfy the increased demand for food. Under the circumstances, new settlers must begin to cultivate the next best lands, or the second grade lands. These lands yield less than the best lands. To the application of the same amount of labour and capital, the best land yields (say) 35 bushels, and the second grade land yields 30 bushels. The price of wheat must be such that by selling 30 bushels of wheat, the expenses of employing that amount of labour and capital (including normal profits of cultivation) must be covered. Otherwise second grade lands would not be cultivated. When second grade lands are cultivated, the best lands yield a surplus of 5 bushels above the expenses of production, which are the same for both classes of land. This surplus is rent, whether it is pocketed by landlord or tenant. Similarly, if the demand for agricultural produce remains unsatisfied after all second grade lands have been cultivated, third grade lands must be cultivated. These yield less than the second grade lands, and so when they are cultivated, the second grade land yields a surplus; and the first grade land, a larger surplus. The second grade lands will then yield some rent, while that of the first grade lands will increase. This surplus, or rent arises because of superior fertility of the better lands.

Suppose labour and capital (including the profit of the cultivator) that are applied to one acre of first class land will get their normal rewards if the total produce sells for Rs. 70 (*i.e.*, Rs. 2 per bushel); and let us suppose that the price of each bushel is Rs. 2. There is no surplus, and the total sale-proceeds are distributed among the labour and capital that are engaged. If, owing to the increase of population, demand for agricultural produce rises, the price rises from Rs. 2 to Rs. $2\frac{1}{3}$ per bushel. It becomes profitable to cultivate second class lands with the same amount of labour and capital. The produce per acre is 30 bushels and its price

is Rs. 70,—the sum just sufficient to remunerate the labour and capital. Since there can be only one price in the market, the produce of the 1st class land will sell for Rs. 81⅔. The expenses on account of labour and capital are Rs. 70. The 1st class land will, therefore, yield a rent of Rs. 11⅔.

Moreover, the best lands will be more intensively cultivated as the demand for agricultural produce rises. But as more labour and capital are applied, the law of diminishing returns will come into operation. The second "dose" of labour and capital will yield less than the first; and hence there will be a surplus on the earlier doses of labour and capital over the marginal dose. As the best land is thus cultivated more intensively, its rent will rise.

Rent and the law of D. R.

Lastly, situation is also a factor in the determination of rent. Suppose all lands are equally fertile, but some are situated near the market, while others are situated at a distance from the market. The yield from every acre of land is 35 bushels. If the price of wheat is Rs. 2 per bushel, the distant lands will not be cultivated. For, in addition to the expenses due to labour and capital applied in cultivation, which are the same on all lands there is some additional expenditure involved in sending the produce from a distant place to the market. So the cost will be higher on these lands. As the supply from the distant lands falls off, the price of crops therefore rises, and must be such as to meet the additional expenses of transport from the distant lands. The better situated lands, therefore, yield a rent. So all lands yield a rent, because of the differential advantages possessed by each piece of land, the advantages being either of fertility, or of situation.

Situation rent.

As a natural corollary of his theory of rent, Ricardo held that rent was the result of price and therefore did not enter into price. The price of the produce tends to become equal to the cost of production on the marginal land. If the price of the produce obtained from the marginal land does not cover the cost of production, that land will be naturally withdrawn from the cultivation of that crop. As a result, the supply of

Rent does not enter into price.

that crop will fall, but if the demand for foodstaffs is the same as before, the price will rise until the cultivation of that crop in those lands will again be paying. Thus the price of the crop will correspond to the cost of production of that crop on the marginal land. But the marginal land 'ex-hypothesis' is a no-rent land. Hence rent is not a part of the cost of production of the crop and consequently of its price. Thus according to Ricardo, high prices are the causes of high rents, and not *vice versa.*

The Ricardian theory of rent has been subjected to a good deal of criticism. First of all, it has been pointed out that there are no inherent and indestructible powers of the soil. Good lands, after a few years of cultivation, lose their fertility, because the chemical composition on which fertility depends is exhausted after a few years of continuous cultivation. This is of course true. But land also possesses certain qualities like soil composition, humidity, climate, etc., which are indestructible.

The second criticism offered by Carey and Roscher is directed against Ricardo's order of cultivation. They point out that in new countries the best lands are not invariably cultivated first. Lands situated near human habitation are first cultivated, whether they are good or not. Thus, the order of cultivation laid down by Ricardo is wrong. To this objection Walker replies that when Ricardo referred to the best lands, he took both fertility and situation into consideration.

Another criticism against the Ricardian theory is that his contention that rent does not enter into price is unwarrented. We shall have a thorough discussion of the relation of rent to prices later on in this chapter.

The modern theory of rent : The basis of the Ricardian theory of rent was the assumption that land was quite different from other factors of production as its supply was completely inelastic. That is why Ricardo considered that the payment for land required a different explanation from that of the payment of other factors of production. But from the short period point of view, the supply of all factors is equally inelastic, while if a sufficiently long period of time is taken into consideration, the supply of land is quite elastic.

Through irrigation, reclamation and the application of manure etc., the supply of land can be increased.

Hence modern economists now seek to explain rent in terms of the theory of marginal product as in the case of any other factor of production. Like labour, land is also a heterogenous factor. First, like any two workers the qualities of two plots of land may be different. Thus rent can be determined on the basis of the same principles as wages. The rent offered for a plot of land tends to be equal to its marginal product to the tenant. Let us assume that differences in fertility and situation are absent,—all plots of land are equally fertile and are situated at the same distance from the market. A farmer is cultivating 50 acres of land with (say) 100 units of labour and capital. He is getting a certain amount of crops. He then takes up another acre of land, all other things remaining the same. So he is now cultivating 51 acres of land with 100 units of labour and capital. Each acre of land will then be cultivated more extensively than before. The additional amount of crops that will now be obtained over that when 50 acres were cultivated is the marginal product of the 51st acre of land and rent of this acre of land will tend to be equal to this marginal product.

Differences in the fertility of plots of land should not also cause any difficulty. If a plot of land is more fertile than another, the marginal product of a given quantity of labour and capital will be greater on the first plot of land than that on the second plot . Thus such a plot of land will yield higher rent.

Rent and price : According to Ricardo, rent of land is a surplus above the cost of production, and does not, therefore, determine the price of agricultural produce. The proof that Ricardo advanced in support of this statement is simple enough. Rent on a plot of land is the difference between the produce on that plot of land over that on the marginal or no-rent land. By hypethesis, the marginal land pays no rent ; and since the price of agricultural produce tends to be equal to the cost of production on the marginal land, rent does not enter into the price of the produce. Rent is, on the other hand, the result of price. It is not true to say that rent is high, and therefore, the price of corn is high. The correct

statement is that the price of corn is high, and therefore rent is high. It is only when the price is high that inferior lands are brought into cultivation, and superior plots of land yield a surplus above the cost of production. Rent is thus price-determined, instead of price-determining.

The statement implies that rent is a surplus above cost of production. In what sense can we support this statement? There is a sense in which the classical economists understood this statement. According to them, all costs reflected *real* costs of production. The supply of labour or capital involves some disutility to overcome which a payment must be made. Wages and interest are, therefore, a part of necessary costs of production. But the supply of land is a free gift of nature and so involves no disutility. There is no element of real cost in the case of land. Payments on account of the services of land are not, therefore, a part of the necessary costs of production, *i.e.*, necessary to overcome any disutility.

Rent as a transfer cost.

If we regard the supply of land as a whole, it has no alternative use and the total of rents paid will not form a part of the price of the produce. But the supply of land for the cultivation of any particular crop is not limited. A plot of land has alternative uses. In order to produce more paddy, more plots of land have to be cultivated. In order to attract more plots of land to the cultivation of paddy, the people would have to offer at least that amount which a plot of land would have earned when jute was cultivated. This is the transfer cost of land, and it enters into the cost and the price of paddy. If this cost is not met, that plot of land will not be available for the cultivation of paddy. Thus from the point of view of the supply of land for any particular use, the rent to be paid is not a surplus, but a part of the cost of cultivation of the crop.

Urban site rent : Urban site rent is determined on the same principles as the rent of agricultural land. But in the case of urban sites, differences in fertility are of no importance. Their rent mainly depends upon the relative situational advantages of different sites.

The rent for houses built for *residential purposes* depends upon situational advantages—such as broad street,

frontage on parks, etc. But other factors also enter into the determination of demand of some plots to the exclusion of others. "Nearness to one's kind is in many cases alone sufficient to explain the demand for some plots. Crowded, noisy and unhealthful city streets attract the working-class more than quiet lanes in the country." The rich are attracted to other quarters, where the fashionable people live. Certain streets are flocked by those who want social distinction.

In addition to situational advantage, investment of more capital on the same plot of land for adding additional storeys also gives rise to rent. The law of Diminishing Returns operates both on agricultural land and on urban sites. After the addition of a few storeys the marginal storey is reached where the annual cost of management, maintenance and up-keep is equal to its rental value. Due to many reasons the lower storeys are rented at a progressively increasing rent, especially when the building is let for commercial purposes. The difference between the letting values of lower storeys and the marginal storeys constitutes rent.

Unearned increment of rent.

All building sites give rise to the problem of unearned increment. The suburbs of a town at first command a low rent, but as the town is extended, the suburbs acquire value and the building sites begin to command higher rent. Similarly, with the opening of a new street or with the building of new parks, sites facing those streets or parks earn high rent, though the owners of such sites have done nothing to enhance the value of their sites. Agricultural land sometimes earn unearned increment *e.g.*, when a town springs up in the vicinity of such lands and those agricultural lands are used as suburbs or when railway lines are opened and lands become connected with distant markets. The increase in the rent as the capitalized value of urban sites is a common experience in many countries. This reaping of unearned increments of rents by the owners gives rise to complex social and political problems. The socialists maintain that such unearned increments should be confiscated by the State and the exchequer finds them proper objects for heavy taxation.

The rent of mines, quarries and fisheries : The working of mines and quarries differs from the cultivation of agricultural land in this that mines and quarries are sooner or later exhausted, while the land is a perennial source of income. The payment made by the leaseholders of mines and quarries includes two sorts of payments, one is royalty for the exhaustion of the contents, and the other is the payment analogous to rent for the differential advantage of one mine over the marginal one. This last factor constitutes economic rent, as it is calculated from the marginal unit. We find both extensive and intensive margins in the working of mines. The extensive margin is obtained by comparing different mines, and the intensive margin is obtained from the working of the same mine more intensively by the application of more and more capital.

The rent of mines and quarries.

The leaseholder of a mine generally makes two sorts of payments; one an agreed annual rent known as the dead rent, calculated on the principles of agricultural rent, the other is the royalty, payable at a fixed rate on each ton of mineral extracted. Now the question is whether the royalty is to be regarded as rent proper. Marshall holds that royalty is the compensation for the exhaustion of the minerals, and is quite different from rent. Taussig holds a different view. He doubts whether any payment at all, royalty or whatever it be called, can be secured by the owner of the poorest mine. Deposits of this sort are at the margin of utilization and at the margin there is no surplus of any sort. According to him, where royalties are paid for *well-known* mines they are simply rent, because the poorest mines can make no payment, whether dead, rent or royalty.

Fisheries, where perennial supplies of fish can be obtained, have an income in the nature of rent, the rent being measured upwards from those fisheries which are regarded as marginal either because of their low productivity, or because of inaccessibility.

Economic progress and rent : Let us suppose that an improvement is effected in agricultural machinery, or an improved type of manure is invented as a result of which production per acre of

Agricultural improvements.

land increases very much. Then the net result in any case will be that there will be more produce per agricultural labour. If the demand for agricultural produce does not rise, increased production would bring down prices. The marginal lands (*i.e.,* the lands which were barely worth cultivating at the older and higher prices), would go out of cultivation, and aggregate rents would fall. But improvements may affect the rents of different grades of land differently. Better lands may respond in a higher degree to improvements than lower grade lands. In such a case instead of falling, rents on better lands might increase. But if the improvement affects only the lower grade lands, then they may become as productive as the better grade lands. In such a contingency the rent of better class lands may fall or dwindle to zero.

Improvement in transport.

Now, we shall consider another class of improvement *viz.,* improvement in transportation and its effect on rent. If, by some invention, transportation is cheapened in a particular country, the rent arising out of situational advantage will gradually dwindle. The market will be supplied from outlying districts of the country and consequently the rent of lands near the market will fall and the rent of the lands in outlying districts will rise. Similar is the case when an old country is supplied by the produce from fertile areas in new countries. The rent of newly opened-up areas rises while inferior lands at home go out of cultivation. Therefore aggregate rents fall in old countries and rise in new countries.

Growth of population.

The amount of rent varies directly with the growth in the number of population. An increase in population creates a demand for agricultural produce. This extra demand is met either by intensive cultivation of better grade lands, or by having recourse to inferior lands. The margin is lowered and rents tend to rise. Further, the growth of towns encourages the use of land for purposes other than the raising of produce. This brings about a greater scarcity of land than before for agricultural purposes. Hence the rent increases still more.

Lastly, as incomes and the standard of living of the people rise, the proportion of their incomes spent on staple articles

of food diminishes. The capacity of the human stomach is limited, and so when the income is doubled the individual may double his consumption of many things, but he will not double his consumption of simple forms of food. The proportion of income spent on foodstaffs thus continually diminishes. Hence with the rise in the standards of living, the price of agricultural produce registers a greater fall relatively to the price of the products of other industries, or does not rise as much as in other industries. Rents, therefore, fail to rise as rapidly as incomes from other industries.

Nature of quasi-rent.

Quasi-rent : The concept of quasi-rent was introduced into Economics by Marshall. By quasi-rent he meant "the income derived from machines and other appliances of production made by man." His argument is that the supply of land and other free gifts of nature is fixed for all time to come. The stock of appliances made by man may remain fixed in the short period, but this supply may be increased to a considerable extent if sufficient time is allowed. We have already seen that the income from any agent of production which is permanently fixed in supply is to be regarded as rent. If limitation in supply gives rise to rent, we may describe income from any property whose supply is either permanently or temporarily limited, as a sort of rent. Marshall suggests that income from those things that are permanently fixed in supply should be regarded as rent, and income from those things that are temporarily fixed in supply should be regarded as quasi-rent—*'rent'* because it pertakes of the nature of rent as its supply is limited, and at the same time, *'quasi'* because the limitation in supply is not permanent, but is more or less temporary. To take an illustration, suppose the demand for fish increases suddenly in a particular season. The supply being not equal to the demand, the price will go up. Of course, fishermen, tempted by the high price, will try to catch more fish by working extra time and by requisitioning boats and nets that have long been out of use. But still the supply cannot be equal to the demand. If the increase in demand persists for a longer period, new boats and nets will be made and more persons will be attracted to the trade and the supply price may come down to its former level. The

income from boats and nets is to be regarded as quasi-rent. This illustration was chosen by Marshall in order to show that the supply of man-made appliances may fall short for the time being, but their supply may be increased later on. From this it is not to be supposed that quasi-rent is the surplus of income over the normal return from appliances made by men, whether considered in the short period or in the long period. Flux and others hold that quasi-rent is not the whole of the income derived from property, but only the excess over the normal return. Flux would regard any deficiency between such income and normal return as 'negative quasi-rent.' But these conclusions are unwarranted. The whole of the income at any period from man-made appliances, and not merely the surplus or deficiency over normal return, is to be regarded as quasi-rent.

The likeness and unlikeness between rent and quasi-rent.

The likeness between rent and quasi-rent lies in this: in the short period the supply of appliances is a *fixed stock* just as land is, the income from such appliances in the short period bears the same relation to price as the rent does to land. But there is also unlikeness between rent and quasi-rent. Land in old countries is approximately a permanent and fixed stock, while appliances made by man are a flow capable of being increased or diminished at will with variations in demand. The permanent scarcity of land gives rise to the phenomenon of rent, and rent as we know does not enter into price. In the short period on account of shortage in supply of man-made appliances or improvements, the income from these sources may not always bear any relation to costs of production. But in the long period quasi-rent is not a real surplus; the sum-total of all quasi-rents must cover the normal return to capital. In the long period, therefore, quasi-rent is not a real surplus, but enters into cost of production. *Hence it is an unnecessary profit in the short period, but a necessary part of normal profit in the long period.*

There is a second sense in which Marshall uses the term quasi-rent. He holds that quasi-rent is an element in wages[2]

[2] Marshall. *Principles of Economics,* p. 504.

and in profits. The income of a man which is due to acquired personal qualities is in the nature of quasi-rent.

Quasi-rent as an element in profit and wages.

"A person is supposed to have certain capital invested in training or accustoming him to some lucrative occupation and the income which he derives *from the qualities he thus acquires* .... is to be called quasi-rent when thought of not in relation to the capital invested but as a certain amount in the same way that rent is thought of.". It differs from what Marshall calls *the rent of extraordinary natural abilities because these are given by Nature like 'pure' land.*

Thus Marshall does not stick to his own definition of quasi-rent as an income from appliances made by man. Cannan[3] rightly objects to Marshall's application of the term in the second sense. There is a good deal of difference between the ownership of an appliance and the possession of personal qualities. You can distinguish between the income derived from the source of current labour and the part derived from the source of personal qualities. Marshall himself says, "human beings are not brought up to their work on the same principles as a machine, a horse or a slave."

Hence it is better to regard the income derived from labour as a whole, the differences in the incomes of labourers being explained by the distribution of natural and acquired talents, than to make a classification of labour incomes into incomes from personal labour and the income from natural or acquired qualities.

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[3] *A Review of Economic Theory,* p. 327-29.

CHAPTER XXV

INTEREST

In Economics, the term, 'interest' refers to the payment for the use of capital, when there is no risk of non-payment, when there are no inconvenience and no additional work consequent on the loan. This is also referred to as 'pure' or 'net' or 'economic' interest. But the sum that is usually paid by a borrower includes, besides pure interest, payments to cover the risks, payments on account of the troubles and inconveniences to which the lender is put and also payments on account of the work that the lender is called upon to do. Thus gross interest includes (*a*) *i.e.,* the payment on account of the use of capital only; (*b*) insurance against risks; (*c*) payment on account of trouble and inconvenience. These risks have been divided by Marshall into two classes, trade risks and personal risks. The former arise from the fact that before production is over, demand may change, or the price of raw materials may fall, or new inventions may lower the cost and hence the price of the product may also fall. The latter arise from the fact that the borrowers may be dishonest, or incapable. The lender must be paid an additional sum to recompense him for these risks. Where a loan involves risks, the lender is put to a great deal of trouble for minimising these risks as far as possible. Moreover, the borrower may repay at a time very inconvenient to the lender, when he cannot find any fresh outlet for his capital; or the lender may be called upon to invest his capital for a period longer than he thinks desirable or safe. The greater the inconvenience, the higher the gross interest. (*d*) Lastly, gross interest also includes payments for work. Every loan involves some amount of work for keeping records of payments of small instalments, etc. The lender expects to be recompensed for this additional work.

Gross and net interest.

Thus gross interest may often be very high, while net interest may be low. Moreover, net interest tends to be equal throughout a country. The force of competition will settle

one single rate for the whole country. But there is no tendency towards equality of the rates of gross interest in different places within a country.

Theories of Interest :

The productivity theory of interest : The theory states that interest arises on account of the productivity of capital.

Interest is paid because capital is productive.

The amount that labour produces with the help of capital instruments is generally larger than the amount it can produce when working by itself. Machinery and tools invariably add to the income of those that use them. That is why they are demanded by individual employers. The use of capital, as we have seen, results in round-about production. Labour is first engaged in the making of tools and plants, developing the means of communication ; after a certain period is over, the final product emerges. Thus as more and more capital is used the method of production becomes more and more round-about. And usually, though not always, the more round-about the method of production, the larger is the volume of the output.

The use of capital in production is subject to the law of diminishing returns. As increasing units of capital are applied, as the methods of production become more and more round-about, or capitalistic, (the supply of other factors remaining the same), the output increases, but at a diminishing rate. An employer will go on adding more and more units of capital until he stops at that point where the price that he has to pay for each unit is just equal to its product. Similarly, in his search for profit, he will substitute units of capital for those of labour or land, if he thinks that at their relative prices he will increase the output by a larger ratio than the expenditure involved. At last he will arrive at the margin of indifference ; he is indifferent whether he uses more capital or more labour or more land, because the addition of any of them will increase the output by the same ratio. What is true of the individual entrepreneur is true of society as well. The rate of interest will therefore tend to be equal to the marginal productivity of one unit of capital.

The theory has been criticised in recent times. The formula that 'capital is productive' may mean either of the two things—that capital produces either more goods or more value. The increase of physical products is obvious enough. But from this fact we cannot conclude that capital produces more value. To deduce that, we must first know the value of the capital goods that have been originally employed. The present value of capital goods depends upon the value of their future incomes, and "in this dependence lurks implicitly the rate of interest." The value of machinery is determined by discounting its future incomes, and in the process of discounting, we must assume a rate of interest. If, from a machine worth Rs. 20,000, we get an annual income of Rs. 1,000, we cannot at once say that the rate of interest is 5 per cent. All that we know is that from the machine, we get an income of Rs. 1,000 per year. And by capitalising this sum at 5 per cent, we determine that the value of the machine is Rs. 20,000. Therefore, when we say that the price of the machine is Rs. 20,000, we have already assumed that the rate of interest is 5 per cent. How can we then determine a thing which we have already assumed in our figures? The productivity theory, therefore, involves us in circular reasoning.

The theory involves circular reasoning.

None-the-less, that productivity exercises *some* influence on the determination of the rate of interest cannot be denied. Even Fisher, the most relentless critic of this theory admits this in the very title of his books: "The theory of interest, as determined by the impatience to spend income and the *opportunity to invest it.*" The latter is nothing but productivity of capital in different industries. If we accept the neo-classical theory that the rate of interest is determined by the demand and supply of loanable funds, the marginal productivity of capital will be an important factor to determine the businessman's demand for loanable funds. Other things remaining equal, autonomous changes in the marginal productivity of capital, caused by new inventions, or new sources of power, or other dynamic changes, are likely to raise the demand for such funds for investment, and hence

Influence of productivity on interest.

the rate of interest. On the basis of Keynesian theory, changes in the marginal productivity of capital influence the rate of interest by affecting the demand for money. Improved prospects for investment (or a rise in the marginal efficiency of capital) induce businessmen to demand larger funds to finance projects of capital construction. Other things being equal, this will cause the rate of interest to rise.

Abstinence, or waiting and interest : The productivity theory explains why capital is demanded. Attention is now concentrated on the influences that limit the supply of capital. Senior was the first economist to point out that saving, which was later on embodied in capital-goods, involved a sacrifice, an 'abstinence' as he called it. People may spend the whole of their income in consuming present goods. But when they save, they 'abstain' from present consumption. Such abstinence is disagreeable. Hence in order to induce people to save, we must offer them some inducement as compensation for their sacrifice. Interest is, therefore, the compensation for abstinence.

Criticism was soon levelled against the word, 'abstinence' as it always suggested an idea of suffering. But not all saving involved pain or discomfort. There is no pain-element in the savings of a Ford. Hence in answer to this criticism Marshall substituted the word 'waiting' for abstinence.

Saving connotes waiting. When an individual saves a part of his income, he does not thereby eternally refrain from consumption. He only defers his consumption for a certain period, *i.e.*, till the fruits of his savings come in an increasing flow. Meanwhile he must wait, and as a rule people do not like to wait. Not only saving, but all kinds of productive activity involve waiting. The farmer who sows his crops must wait till the crops are harvested. The gardener who plants a seed must wait till it grows into a tree and begins yielding fruit. Labour must be expended before the final output can be consumed. Meanwhile, both labourer and capitalist must wait. Waiting is, therefore, a necessary condition for production. It is thus a separate factor of production, and can be substituted for other factors.

Since waiting is a factor of production, its price will be determined by the marginal analysis. That is, the rate of interest tends to equal the reward necessary to call forth the marginal increment of saving. There may be certain amounts of waiting that will be supplied even if there be a negative rate of interest. Individuals may be so extremely cautious by temperament, or so anxious for providing for the future, that they will save even if they get back a smaller sum in future. It should be remembered that though such cases are theoretically possible, they are rare in actual life. Similarly, there would be some waiting if there was no interest, a case perhaps more common. The richer persons cannot but save ; it is impossible for them to spend the whole of their huge income. Hence in their cases, waiting is more or less automatic. There may also be cautious persons who will save if they are only sure that they will get back the same sum in future. So a large amount of waiting will be supplied at very low rates of interest. But the aggregate amounts of waiting that will be supplied in this way are not usually sufficient to satisfy the demand. The rate of interest must go up until the marginal savers contribute their mite. At this point, the supply of waiting is equal to its demand. Strictly speaking, it is not correct to speak of the marginal saver ; the expression should rather be marginal increment of waiting that is required for production. The rate of interest must be high enough to call forth this increment of savings.

Interest is the reward for waiting.

This theory provides reasons for the scarcity of savings, or of the supply of loanable funds so far as the latter depends upon the volume of voluntary savings. But it does not furnish a complete explanation of the factors determining the rate of interest. The supply of loanable funds is scarce, not only because people do not like to wait, but also because they may like to hold cash at present.

Time preference, or agio and interest : The theory states that interest is the agio or the premium which present goods command over future goods of a like kind and a like amount. This premium arises from the fact that men, as a rule, prefer the present to the future. Just as owing to the defects of our ocular vision, distant things appear smaller,

so owing to our mental make-up, future goods, or future satisfactions appear smaller than they actually are. That is, the future undergoes a discount when reviewed from the present. That discount is the interest.

In a definite form, the theory was first advanced by John Rae in 1834. Later, it reached full development at the hands of Bohm-Bawerk, the leader of the Austrian school of economics, and of Fisher. There is a slight difference in the presentation of the theory by Bohm-Bawerk and by Fisher.

Bohm-Bawerk's theory.

According to Bohm-Bawerk, present goods possess an agio over future goods, owing to the fact that people prefer a present satisfaction to a future satisfaction of an equal amount and of equal certainty. This preference, according to him, is due to three circumstances. *First,* the future is less clearly perceived than the present. This fact is called "the perspective under-estimate of the future". *Secondly,* owing to the fact that present wants are felt more strongly than future wants, demand for the present goods is relatively greater than that for future goods. Hence there is a relative scarcity of present goods as compared with future goods, (*i.e.,* scarcity in relation to demand). *Thirdly,* the more round-about are the processes of production, the greater is the final output. Hence owing to the greater productiveness of time-consuming, or indirect methods of production, present goods possess a 'technical superiority over future goods.'

Fisher's criticism of Bohm-Bawerk.

Fisher would accept the first two conditions. But the third, in his opinion, surreptitiously brings in the productivity theory. The greater productivity of the longer processs of production requires more proof than has been adduced by Bohm-Bawerk. Granting the proposition, it appears to be nothing but the productivity theory of which Bohm-Bawerk was a vehement critic. Moreover, according to Fisher, the third factor acts on interest by modifying the first two factors. Owing to the greater productivity of the capitalistic process of production, there is an abundant supply of goods in the future . Hence the demand for future goods will fall relatively to the present. Owing to this reason, and also because of the greater urgency of present needs, present

goods are preferred to future goods, and therefore possess a technical superiority over the latter. The third factor is therefore not an independent determinant of interest, but works out its effect through the first two factors.

The theory as stated by Fisher.

According to Fisher, "time-preference" is the central fact in the theory of interest. By that phrase he meant what Bohm-Bawerk understood by "the perspective under-estimate of the future". It is the preference that an individual has for present income or satisfaction over future income or satisfaction of an equal amount and equal certainty. It will be determined by the rate which will overcome the individual's impatience to spend income. This degree of impatience of an individual depends, *first,* upon size of his income ; *secondly,* upon the distribution of the income in time ; *thirdly,* upon the composition of the income ; *fourthly,* upon the certainty of enjoying the income in the future ; and *lastly,* upon individual characteristics, like foresight, self-control, etc. The higher the income, the greater the chance that present wants will have been more satisfied. Hence the individual will discount the future at a lower rate. The converse happens with poor persons. The distribution of income may be conceived in three different ways:—uniform income throughout, income increasing gradually in the future, and income decreasing in the future. If the income is uniform throughout, the rate of impatience will then be determined by the size of the income and upon personal characteristics. If the income increases with age, it means that the future is well provided for while the present income is relatively small. Hence the latter will be relatively scarce, and the rate of discount will be high. The opposite is the case with decreasing income over a period, and the rate will be low. Similarly, the composition of income works out in this way. The incomes of individuals are spent on different sets of goods and services. The diminution of any one set of goods and services would affect the rate of time-preference in the same way as a decrease in the income of individuals. Lastly, if the future is uncertain, the rate of time-preference would be high. But the discussion of the influences of risk and uncertainty belongs, not to the scope of the theory of interest, but to the theory

of profit. Above all, everything depends on personal character. If the individual is of a spend-thrift character, the degree of his impatience to spend would be very high.

After the individual rates of time-preference are determined in this way, they tend to become equal to the rate of interest. When the rate of time-preference of an individual is higher than the market rate of interest, he will borrow and apply the sum to satisfy his more pressing wants ; just as he would buy additional units of a commodity when the marginal utility of additional units to him is higher than the price. Similarly, when his rate of time-preference is lower than the rate of interest, he will lend to the market and gain thereby. In this way, the individual will vary his income-stream, by borrowing or lending, until his rate of time-preference is equal to the rate of interest.

Liquidity-preference and the rate of interest : Recently Lord Keynes has put forward a new theory of interest.

His criticism of orthodox theory.

According to him, neither the theory of marginal productivity, nor that of waiting is adequate to explain the rate of interest under all circumstances. Of course it is true that the marginal net product of capital tends to become equal to the current rate of interest. But that does not mean that the rate of interest is determined by the former. The marginal net product of capital is determined, on the one hand, by the expectations as to the future course of business, and on the other hand, by the cost of producing the capital goods. These influences cannot determine the rate of interest. The rate of interest cannot also be the reward for savings. "For if a man hoards his savings in cash, he earns no interest even though he saves just as much as before."[1] Nor is it true to say that the rate of interest must be such as to equalise the demand for capital with the supply of savings. The volume of savings in any country is of course equal to the value of investment goods, but not in the way assumed in the classical theory. When a particular individual saves a greater portion of his income than before, his action, by itself, does not increase the aggregate supply of savings. Since he is now

[1] Keynes. *The General Theory of Employment, Interest and Money,* p. 167.

spending less money on the current consumption goods, the incomes of the producers of consumption goods fall off. "One man's expenditure is another man's income, and when one spends less, the other men earn less." So the immediate result of the increased saving by an individual is a fall in the incomes of some others. They will, therefore, be forced to save less. Hence total savings may not increase. Provided that there is no new investment in capital goods, increased savings by one individual will only lower the incomes of others. But when businessmen decide to produce more capital goods, more money is spent by them in hiring the factors of production, or in buying raw materials, etc. The incomes of the factors of production increase. Given the same desire to save as before, aggregate savings will also increase. Thus when investment increases, the volume of savings will also increase through higher incomes. So the volume of savings is brought into equality with the value of investment goods, not through the instrumentality of the rate of interest, but through the level of incomes.

Interest is the payment made for borrowing money.

The rate of interest is the price that has to be paid for borrowing money. The essence of a transaction involving the payment of interest is that the lender parts with money or immediate command over general purchasing power in return for a promise to pay the principal sum and something extra in the future. If the borrower returned at the time of repayment the same sum of money that he had borrowed, the lender would have no incentive (apart from philanthropy) to part with his money. Hence the borrower must pay sometning extra in addition to the sum borrowed. Thus the rate of interest is the reward which is paid to the lender to overcome the latter's unwillingness to part with control over liquid cash. In other words, it is "the reward for parting with liquidity."

Meaning of Liquidity-preference.

The individual who possesses a certain amount of money income has first to decide how much he will save. This will depend on what Keynes calls as the *propensity to consume*. Given the propensity to consume, or its converse, the desire to save, the individual will save a certain proportion of his

money income. It remains for him to take another decision. He may hold his resources in the form of money (or immediate command over goods and services); or he may part with immediate command over general purchasing power in return for a promise of payment at some future date. In other words, he may "hoard" them, or lend them at interest. How much of his wealth he will hoard (*i.e.*, hold in the form of cash or bank deposits), and how much he will lend will depend on the degree of his preference for retaining a portion of his resources in the form of money in different sets of circumstances. This preference for liquid cash over loans is termed *"liquidity preference."*

Causes of Liquidity-preference.

Now the question is, why should anyone want to hold his resources in the form of cash in hand, or in the form of bank deposits, on which he earns no interest when he can easily get interest by lending them? There must be some reason which induces individuals to forego interest and hold their wealth in the form of idle money. This preference for holding one's resources in a liquid form is due to a variety of factors. *First,* an individual will hold cash in order "to bridge the interval between the receipt of income and its expenditure." Most of us receive our income after a month or a week, while we have to make payments almost day by day. Hence we must hold a certain amount of ready money in hand in order not to default in our current payments. The amount of cash which will be required on this account will depend on the level of incomes, on the interval at which incomes are received, and on the methods of payment prevalent in that locality. *Secondly,* businessmen and traders must also keep a certain amount of cash in their till, partly to oblige their customers and partly to make payments. *Thirdly,* cash is also held in order to provide for contingencies which may necessitate sudden expenditure. It may not always be possible to call in the loans granted, or to sell securities profitably when sudden emergencies make it necessary to have ready cash. *Lastly,* cash may be held by individuals from a speculative motive. The individual may expect a future rise in the rate of interest. He may, therefore, hold his resources in the form of cash, with a view to

lend them in future at high rates. *Conversely,* when people expect a fall in the rate of interest in the future, they would at once proceed to lend their resources at existing higher rates, and thus decrease their holdings of cash. So long as there are differences of opinion as to the future movements of the rate of interest, some will be holding money to earn profit from a future rise, while others will be parting with their money as they fear a fall in the rate of interest. Under normal circumstances, the amount of money which will be held in order to satisfy the first three types of motives is not much affected by changes in the rate of interest. It will depend on the level of incomes and on the general economic activity. The amount of money which is held on these accounts might be called *active balances.* But the amount of money which is held to satisfy the speculative motive is sensitive to changes in the rate of interest. The amount of money held on this account might be called *inactive balances.*

Usually the higher the rate of interest, the smaller, in general, is the proportion of their resources which people will want to hold in the form of cash. For the loss of interest on idle cash will then be greater, while the gains from lending and from the purchase of securities are correspondingly higher. People will then be anxious to lend. Some people may expect a future fall in the rate of interest, and will then want to lend. Lastly, the higher rates of interest will check business enterprise, cause new investments to fall ; the level of money incomes will decrease ; and the amount of money required for transaction purposes will now be smaller. Similarly, at lower rates of interest, people will want to hold more money, because the loss of interest will now be smaller ; because some people will expect a future rise in the rate of interest, and so will hold idle balances at present ; and because lower rates of interest will increase the level of money incomes. Thus we can draw up a schedule of liquidity-preference, showing the amounts of money which people will want to hold at different rates of interest.

Given this schedule of liquidity-preference, the rate of interest will then be determined by the quantity of money existing at any time. "This is where, and how, the quantity

of money enters into the economic scheme".[2] The rate of interest must be such as will equate the demand for money for liquidity purposes with the supply of money. The amount of money existing at any time must be held by some individuals. The rate of interest will be such as to induce individuals to hold all the available supply of money. If the rate of interest were lower than this unique rate, the aggregate amount of money which people will wish to hold will be greater than the supply of money. This would cause the rate to go up. Conversely, if the rates were higher than this level, there would be more money than people would wish to hold. Thus the schedule of liquidity-preference and the quantity of money in existence determine the rate of interest for any given period.

The rate of interest and the quantity of money.

One important difficulty in connection with the theory is that Keynes is not very clear on the meaning that he attaches to "money". Money, he says, is co-extensive with bank-deposits. But he states in his discussion with Robertson that his theory does not run in terms of demands for and supply of *credit*. Moreover, the rate of interest is not independent of the demand for investment funds, as is stated by Keynes. The amount of cash balances that businessmen will hold is influenced to a large extent by their demand for "finance" for investment purposes. The rate of interest is not, therefore, determined independently of the marginal efficiency of capital. However, as Prof. Robertson has pointed out, Keynes' statement is not incompatible with the neo-classical theory. The rate of interest may well be regarded as the reward for not hoarding (as in Keynes), and also for not spending it for consumption.[3]

What determines the rate of interest? These theories may be divided into two groups, the neo-classical theory and the Keynesian theory. The former regards the rate of

interest as being determined by the demand and supply of loanable funds. The demand for loanable funds arises from a variety of causes: the application of these funds in the adoption of round-about processes of production increases the income of businessmen at a greater ratio in the future so that they demand more funds ; or the government becomes willing to pay something in order to get command over present resources so as to conduct a variety of operations like war, etc.

Influences on the supply side.

The supply of loanable funds depends upon two factors, the volume of voluntary savings and the supply of bank loans. The aggregate demand for and supply of loanable funds determines the rate of interest. It will settle at the point where demand and supply of loanable funds are equal. An increase in the volume of savings will tend to increase the supply of such funds ; and to depress the demand for funds as increased savings will mean decreased consumption. This will cause the rate of interest to fall.

According to the Keynesian theory, the rate of interest is determined by the demand and supply of money. The supply of money depends upon the banking system. The demand for money is dependent on the liquidity-preference of the people. The demand for money at a given rate of interest must be such as to absorb the aggregate supply of money. If, as a result of the inflation of currency, the supply of money increases in a country this will cause the rate of interest to fall, provided that the fact of inflation does not cause a change in the liquidity-preference.

The two groups of theories are not so conflicting as they appear at first sight. The inflation of currency will also increase the supply of loanable funds in the country, and lead to a fall in the rate of interest. A change in the liquidity-preference will cause the people to supply more or less funds as loans in the market, and may be said to affect the rate of interest by affecting the supply of such funds.

What is then the relation between the volume of savings and the rate of interest? The volume of savings depends on the level of money-incomes and the propensity to save, *i.e.*, the proportion of their incomes which people

want to save at different levels of income. But given the state of liquidity-preference, an increase in the volume of savings is likely to increase the supply of loanable funds in the market, and to result in a fall in the rates of interest. Hence the volume of savings influences the rate of interest by affecting the factors which determine the latter.

The future of interest—effect of inventions : What will be the future of interest? How will the progress of society affect this rate? Interest, as we know, depends on two factors, the demand and supply of loanable funds of money. The future of the rate of interest therefore depends on the fact whether the demand for loans will continually increase owing to the inventions and improvements, or whether there will be a larger supply of funds as society makes progress. It depends, in the words of Taussig, "on a race between accumulation and improvement."

It depends on the demand and supply of capital.

The general expectation is that the supply of loanable funds will increase vastly, mainly because as man advances in the scale of civilisation, he becomes in general more far-seeing. The primitive savage never gave any thought to the future. But as man has progressed, he has become more willing, nay, eager to lay something by against a rainy day. In Keynesian language, the liquidity-preference of the people has tended to decline. Moreover, the capacity of the people to save will increase greatly as, owing to the greater general productivity of industries, the level of money incomes rises. Hence the supply of savings would tend to increase. This is likely, other things being equal, to increase the supply of loanable funds, and hence to lower the rate of interest.

Effect of inventions on interest.

But whether it will fall or not will depend on the future demand for such funds. That depends upon the progress of inventions and improvements. Such inventions will always raise the demand for loanable funds. New types of machines will have to be built and installed. It may call for more and more elaborate plants, or lengthen the processes of production. In that case, the demand will increase. On the other hand, as Rae pointed out long ago, the division of labour has a tendency to economise waiting. The improvement

in the methods of production may shorten the processes already done by machinery by making some of them simpler and easier. The ultimate effect of the inventions will depend on the relative influences of these two circumstances.

On the whole, there is every likelihood that the rate of interest will fall in the future. There are also two other reasons why the rate of interest will tend to fall in the future. In the first place, the general tendency has been, especially in the western countries, for the growth of population to become stationary or even to decline. This is likely to lower the demand for laonable funds as given the same structure of production less capital will now be required to produce the same volume of goods per head. Secondly, as a community grows richer, its propensity to consume declines. The proportion spent on consumption tends to diminish and the proportion that is saved tends to increase, as the total income increases. This is likely to depress present consumption demand as well as the demand for capital goods. Hence the rate of interest is likely to fall.

Will the rate of interest be ever zero?

Will it ever fall to zero? From the point of view of the demand for loans, zero rate of interest means that the marginal net product of capital is nil. When the marginal net product is nil, that means we cannot increase the product further by employing more capital. We have reached a state in which our productivity has reached the peak. It means that all our wants have been satisfied. But we cannot conceive of a state of society in which men will have no wants, and no desires. So long as these remain, there will always be endless possibilities for employing capital. The rate of interest, therefore, cannot fall to zero.

Similarly, from the side of supply, a zero rate of interest means that people will go on lending without expecting any reward. But there are certain reasons why the liquidity-preference will not drop to zero. As the rate of interest falls, more money will be absorbed to satisfy liquidity-preference on account of the transactions-motive, while the fall in the rate of interest will diminish the loss that one would sustain in keeping larger cash in hand. Hence "institutional and psychological factors are present which set a

limit much above zero to the practical decline in the rate of interest." Hence there is no possibility of the rate of interest ever falling to zero.[4]

Different rates of interest : So long we have been discussing economic interest. Pure interest should remain at the same rate everywhere, provided that there is full competition. But in fact, rates of interest are often different in different countries. Even within the same country the rates of interest charged by different lenders differ widely. What are the causes of these differences in the rates of interest?

Differences in interest rates are primarily due to the fact that all borrowers cannot offer equally good securities. Where the lender is sure of the honesty and financial strength of the borrower, and knows that there will be no default, as in the case of government, he will be willing to lend at comparatively low rates of interest. But he will charge a high rate if he expects the opposite as in the case of our cultivators. A second reason for the difference in interest rates is that different loans are granted for different periods. If a loan is required for a long period, the lender will lose command over his resources for a long time. His position will become less liquid, and he will expect to be paid a higher rate of interest than if the loan was required for a short period. Lastly, the market for loans is usually imperfectly competitive. It consists of a large number of sub-markets specialising in different types of loans. The joint-stock banks grant loans to some class of borrowers, while the indigenous bankers deal with another class. The village money-lenders have often not to meet with much competition in their business of money-lending. Hence different rates of interest may prevail in different markets without there being any equalising tendency. People in the villages may prefer to keep their money in the Post Office Savings banks at low rates, than to keep it at joint-stock banks at higher rates.

The last factor (*i.e.*, market imperfections) explains why the rates of interest may remain at different levels in different countries. The lenders in one country may be reluctant to invest their funds in another country even if they can get higher rates as they may not like the securities that the borrowers can offer or because the political future or the economic potentialities of that country are not properly known.

Necessity and justification of interest : The payment of interest has become respectable only in recent times. From early days there has always been a sting of reproach round the theory of interest. The ancient people had no idea of the nature of services rendered by capital. Hence Aristotle condemned usury in no measured terms. Following him, the scholastic writers held that the loan of money was not a sacrifice on the part of the lender, nor a benefit to the borrower, and hence to derive interest from money was to make an unnatural use of money. In ancient times, there was not much field for profitable use of capital ; most of the loans were consumption-loans, granted by rich persons who had surplus money, and borrowed generally by poor and needy persons. Hence dealings in interest were condemned.

In recent times, the criticism of Karl Marx and other socialists has brought the question of the justification of interest to the forefront. Value, according to Marx, was determined by the amount of labour required in production, and hence value should belong wholly to labour. But the labourers were paid only what was required for their subsistence, and the 'surplus' was appropriated by the capitalists. Hence interest, according to Marx, was theft, or robbery. In the socialist state, there would be no interest.

Socialistic criticism of interest.

It is not the place to discuss the ethics of private property. So long as we maintain the institution of private property, interest has to be paid in order to overcome people's time-preference or liquidity-preference. But apart from the question of private property, interest has an independent justification. It can be shown that even the government of a socialist community will have to reckon a rate of interest, at least for book-keeping purposes, mainly for two reasons. The government will possess limited capital resources which

would have to be invested in different industries. The productivity of different industries, however, can never be the same. Some will yield a return of (say) 10 per cent, while others would only give a 3 per cent. As the socialist government would also try to get the maximum return from its capital, it must have a standard, and would not invest capital in those industries which returned a rate below the standard rate. That standard rate is nothing but interest. The rate of interest therefore "serves as a screen by means of which capital projects are shifted and through which only those are allowed to pass which will benefit the future in a higher degree.[5]

Not only that but the socialist government would have to count interest if it wishes to advance the standard of life. Suppose previously all the labourers were employed in turning out consumable goods, so that the whole output was equally divided among them. In order to raise the standard of life of the workers, some labourers must be employed in turning out producer's goods, so that after a certain period, the use of the producer's goods would increase the volume of consumable goods. But for the present, the labourers who are turning out production goods must be supported by others. So the remaining labourers must give up a certain amount of their share of the consumable goods for them. Naturally their shares will be deducted by an equal percentage, which is nothing but interest. That is, the labourers must wait and in order that they may enjoy greater incomes in the future, they suffer a temporary reduction of their incomes. This temporary reduction is nothing but the price of waiting, *i.e.*, interest.

[5] Henderson. *Supply and Demand*, p. 130.

CHAPTER XXVI

WAGES

Nature of wages : Wages are the remuneration paid for the service of labour. Wages, however, differ in some respects from interest and rent. There is a pure rate of interest which is the same in a market. There is no such thing as a pure rate of wages. Wages vary from man to man and from place to place. Interest is homogeneous ; wages are heterogeneous. Wages also differ from rent. Rent varies from a sum little above zero to a huge amount. The degree of variations in wages is not so great. Wages cannot fall down below a certain minimum, which is necessary for keeping a man fit and alive. Moreover, there is another distinction between rent and wages. While the general rate of rent is unmeaning, a general rate of wages is not unmeaning. There is a general wage rate in the sense that it varies comparatively little as between a substantial minimum for the bottom grade and a not very much greater return for the higher grades of those labourers who possess high skill. We may speak of a general rate of wages in another sense as we speak of a general level of prices. As general prices may be high or low in the sense that most of the prices are high or low, so we can speak of a high or low general rate of wages in the sense that wages for most grades of labourers are high or low in terms of money. Wages, therefore, differ both from rent and interest.

Is there a general rate of wages?

Real wages and nominal wages : The employers pay a certain sum of money per week or month or per piece to the workers. This sum represents the nominal or money wages that a labourer receives in return for this labour. But money is only a medium of exchange which is wanted because it enables one to purchase goods and services. Hence it is necessary to distinguish between *money wages* and *real wages* which consist of things that the labourers can buy with his money wages. Real wages thus refer to the amount

of necessaries, comforts, and luxuries which the labourer can obtain in return for his services. They depend on a variety of factors besides money wages.

Factors determining real wages : (1) The first factor of importance determining real wages is *the purchasing power of money*. Every labourer is, of course, paid in rupees, annas and pies. But nobody can eat or drink money. And the real remuneration obtained by him depends upon how much a rupee will buy in the market. Money wages may be high in a country, yet it may mean no real advantage if the price level is also higher in that country than in another. In new countries money wages are higher than in old countries but the difference in real wages is not so marked. The general purchasing power of money is best gauged by the use of the index numbers.

(2) The *form of payment* is also a factor in the determination of real wages. Though a labourer is generally paid for money, he may receive some additional payments in kind. A fisherman may obtain a free supply of fish ; an agricultural labourer may often get cheap or free supplies of rice, milk, etc. These are to be reckoned when determining real wages. Many services are pensionable ; in determining real wages we have to make allowance for such pensions.

(3) The *length of the working period* is also a factor to be taken into consideration. The number of days in a week, and the total number of working days in a year are all to be reckoned. Two labourers may earn equal money wages, but one of them may be normally unemployed for a number of months in the year. The real wages of the second worker will then be lower than those of the first.

(4) The *nature of employment* is another important factor. If the work is of such a nature that the longevity of the worker is reduced, as for instance that of a railway engine driver or a blast furnace worker, then in spite of high nominal wages, the real wages will be low. Pleasantness and social standing of an occupation may induce a person to accept lower wages. In computing real wages we have to take these into account.

(5) The *possibility of extra earnings* has also to be counted. If the number of working hours in any occupation is small, the worker may be able to earn something extra in other subsidiary occupations. To take an illustration, teachers may augment their income by writing in the journals.

(6) *Regularity of employment of the worker* is a factor in determining real wages. When the employment is for the whole year, though at low money wages, it may compare favourably with another occupation where, though the wages are high, the employment is only for a part of the year.

Prospects of success, and of promotion in the future and good treatment by the employer may induce workers to accept lower wages than those obtainable elsewhere. The distinction between money wages and real wages is important when we want to compare the earnings of labour at different periods and places. The labourers are well off not because money wages are high, but when real wages are high.

How wages are determined

The subsistence theory : This theory of wages owes its origin to the Physiocratic School of France, which flourished in the eighteenth century. The German economist, Lassalle, christened it as the Iron Law of Wages or the Brazen Law of Wages.

According to this theory, wages are settled by a bargain between employers and labourers. The masters being a few in number can combine and dictate wages, whereas labourers having no reserve have to accept whatever wages they are paid. But the wages cannot fall below the subsistence level —the subsistence level being the level which just maintains the worker and his family. If it falls below that level, the workers will not be able to marry and to maintain families. After a generation, death would reduce the number of workers,—there being insufficient births to fill up the gaps caused by death. The supply of labour will fall short of demand and the level of wages would go up. It cannot rise above the subsistence level. If it does so, the labourers will marry early and the number of workers will increase.

The supply being greater than demand, wages will again fall to the subsistence level.

It is evidently based on the Malthusian theory of population. It is erroneous, as it argues, that an increase in wages will necessarily mean an increase in the birth rate. This assumption is false as has been pointed out previously. An increase in wages may be generally accompanied by a rise in the standard of living. Another criticism which may be advanced against the theory is that with few exceptions, the subsistence level is more or less uniform for all classes of workers. Hence the theory cannot explain the differences of wages among the different classes of labourers. Lastly, it lays emphasis on the supply side of labour, and the demand for labour which is also an equally potent factor in determining wages has not received consideration in this theory.

The theory is based on Malthusian theory of population.

The standard of living and wages : The idea of a subsistence level was abandoned towards the second half of the nineteenth century and in its place was substituted the idea of the 'standard of living'. The underlying idea of this theory was that wages tend to conform not to the subsistence level, but to the standard of living to which a class of labourers was habituated. The standard of living is considered to be the fundamental cause determining wages. Not only must a group of labourers receive as wages what are sufficient to maintain the worker and his family, but the wages must be such as to keep the labourers in that standard to which they are accustomed. It is virtually a modification of the subsistence theory of wages. Standard of living means much more than mere subsistence level. It means not only the necessaries of life, but a possibility of receiving a certain amount of education, of obtaining a certain amount of comfort and leisure at regular intervals.

Interpreted in a sense the theory may be true. There are two ways in which the standard of living may affect the level of wages. First, "an established standard of living will cause workmen to stick more stubbornly to a demand for what they regard as decent wages." But it should be pointed out that the wages cannot be maintained by these means at

a point above the marginal worth of the labourers. Secondly, the standard of living may affect wages by affecting the marginal productivity of the workers. This it can do in two ways. It is well-known that a close correlation exists between the standard of living and the efficiency of the workers. A higher standard of living which enables workmen to have more nourishing food, better homes, freedom from worries, etc.,—increases their efficiency to a large extent. Thirdly, the standard of living may influence the marginal productivity by setting a limit to the number of population. If the wages do not cover the standard of living, the labourers may be unwilling to marry and have children. The supply of labour in that group will fall off; as a result its wages would rise.

But if the theory means, as some of the upholders of the theory would have us believe, that the standard of living is a *direct cause* in determining wages, then the theory may be subjected to a number of criticisms. First, the standard of living is but one of *the conditions* determining a higher rate of wages, the others are a high productivity of industry, improvement in the arts, increasing capital, etc. Secondly, a high standard of living and a high rate of wages are mutually interdependent. As a high standard of living may cause high wages, so also high wages are a condition precedent to maintaining a high standard of living. Thus there is arguing in a circle. Thirdly, Cannan argues that the history of civilisation is a history of the gradual rise of the earnings. The upholders of the theory cannot argue that the rise in wages takes place because the standard rises, since the essence of the idea of a standard is something that the workers have become accustomed to form habit. Lastly, the theory takes no account of the demand for labour and its influence on determining the remuneration of labour. It is a purely supply theory and as such is one-sided.

To conclude, the theory may be accepted as true with some qualifications. The influence of the standard of living on wages is mainly indirect. It is direct in so far as the standard of living increases the efficiency of workers and thus the productivity of the industry as a whole and in so far as it can increase the bargaining power of the worker.

Residual claimant theory : According to Walker, the worker is the residual claimant of the products of industry. Wages, according to him, equal the whole product, minus rent, interest and profit. Rent, interest and profit are determined by their own laws. But as there is no specific law by which wages are determined, the workers get what remains after deducting rent, interest and profit. If, by the increase in the efficiency of the workers, the product increases, they would get more as wages. The hopeful feature about this theory is that it is not so pessimistic about the future of labour as the subsistence theory. This is essentially a productivity theory inasmuch as it holds that labour gets wages out of its own products, *i.e.*, from its own contribution to the national dividend. The more the worker produces, the more will be obtained by him.

But this theory is defective inasmuch as (*a*) it cannot explain how the trade unions by combining labourers can raise wages from time to time ; and (*b*) secondly, it takes no account of the relative scarcity and abundance in the supply of labour in relation to its demand and the influence of the supply side in determining the prices of labour. (*c*) Thirdly, if you can explain rent, interest, and profits by the help of supply and demand theory or a marginal productivity theory, wages can also be similarly explained.

Wages-fund theory : Based on an idea of Adam Smith, the Wages-fund theory reached its full development at the hands of Mill. "Wages," according to Mill, then, "depend upon the demand and supply of labour ; or as it is often expressed, on the proportion between population and labour. By population is here meant the number only of the labouring classes, or rather of those who work for hire ; and by capital, only circulating capital, and not even the whole of that, but the part which is expended in the direct purchase of labour." The wages-fund, or the part of capital spent in the direct hire of labour was fixed, being the result of saving or accumulation in the past. This fund constituted the demand for labour, and the average rate of wages was determined by dividing the fund by the number of workmen. Hence it follows that if the general rate of wages is to rise, either of the two things must happen ;—the fund must

increase, or the supply of labour must diminish. But the increase of the fund is rather a slow process, because savings increase slowly. Hence came the natural corrollary that, if labourers were to better their conditions, they must restrict the number of their children. Further, if any group of labourers succeeds in exacting higher wages, the only result will be that other labourers would get less.

The theory was attacked by Longe and Thornton, and it was the latter's criticism that led to Mill's celebrated recantation of the theory. Later on Cairnes tried, in 1874, to defend the theory. The demand for labour, according to Mill, is contributed by the amount of circulating capital. Hence it follows that the *demand for commodities is not demand for labour.* That is, when people buy commodities, they spend money, whereas the demand for labour comes out of a part of their savings embodied in circulating capital. The statement was unhappy. The demand for labour is a *derived* demand, *i.e.*, derived from the ultimate demand for commodities. When the demand for commodities is high, employers expect brisk trade, and offer more employment to labour. Conversely, when the trade is bad. Moreover when people spend the whole of their income, labour is engaged in turning out finished consumable goods. When people save and invest, labour is engaged in making producer's goods. Hence the difference between spending and investing is only a difference in the direction in which labour would be employed. In the long run, of course, had people saved and invested more, the supply of tools, machinery, factories, etc., would have been increased and improved. This increase in the aids to labour would have augmented the productivity, and hence the wages of labour. That is perhaps the only truth in this very circuitous statement.

The funds devoted to the hire of labour is not fixed.

But the most fundamental, criticism of the theory is that the amount of the wages-fund was not fixed and predetermined, except in the very short period. The fund may be conceived of either as a stock of money, or as a stock of goods. The volume of money in a country is a highly elastic fund, being dependent on the expectation of profit or loss, and on the policy of the banks.

When trade is brisk, and the employers expect good profit they would lay out more sums in hiring labour. Conversely, when trade is depressed, the process is slowed down. Similarly, the stock of goods destined for labour, or the volume of circulating capital is not absolutely fixed. The stock of goods may be fixed for the time being, in the sense that the food-supply that is required for the subsistence of labour is more or less fixed for a season. But it is not fixed for all times. Similarly, the volume of circulating capital is a highly elastic fund, varying quickly as a result of the activities of the investing public, according as they find it more attractive to invest and so advance as capital a larger part of their present incomes, or to spend a larger part of their incomes on "a Rolls Royce ; or an extra month on the Reviera." So the wages-fund is a highly elastic fund. Its actual volume depends on the very prospect of employing labour profitably. The truth is that the amount which the labourers can draw out of the fund depends on what they themselves put into it, as well as on the competition of the employers. If labour is highly efficient, the national dividend will be higher and the share going to labour will be higher.

Marginal productivity and wages[1]**:** The modern theory of wages is an application of the fundamental principles of the theory of value to labour. Just as the value of a commodity tends to equal its marginal utility to the individual, so given the supply of labour, its wages will tend to equal the marginal productivity of one unit of labour to the employer. The marginal net product of one unit of labour is equal to the value of the output that remains when one unit of labour is added to or withdrawn from a business, assuming that the supply of other co-operating agents is kept fixed and that the business is organised in the most economical manner in all cases. Assuming no change in the supply of the other co-operating factors of production, and no change in the price of the product of labour, the employment of more and more units of labour in a firm will increase the product at a diminishing rate. The employer will go on

Wages equal the marginal net product of labour.

[1] See before Chap. XXII.

adding more and more units of labour; the productivity per worker diminishes, until a point will come when the value of the increase in the product due to the employment of the additional unit of labour is equal to the wages paid to the worker. That unit of labour is the marginal unit, and since all units are, by hypothesis, of equal efficiency, its rate of wages will settle the rate paid to every other unit. If the wages are above the marginal net product of labour, the employers will curtail the employment they offer to labour. Similarly, if the wages are below the net product, the employers will bid more for the services of labour. Hence in order that equilibrium may exist *i.e.*, in order that business may neither expand, nor contract, wages must be equal to the net product of the marginal labourer.

It should be clearly understood that the marginal labourer is not necessarily an inefficient labourer. He is a "worker of normal efficiency whose additional output repays the employer with normal profits (of course after paying wages) and no more." He is marginal in the sense that the addition of him to the labour force equals the supply of labourers upto the number which the employer considers worth employing at the current rates.

Of the many criticisms advanced against the theory (discussed elsewhere),[2] the most serious is that it fails to take account of the influences acting on the supply-side. A wage is not merely a price paid for a factor; it is also the income of a labourer and as such, reacts on his efficiency. Wages must not only be equal to the marginal product of labour, it must also be adequate to support his standard of living. If the wages do not cover the standard of living of the workers, then either the standard will be lowered, in which case his efficiency will suffer, and the marginal net product will fall or the birth-rate will decline, the supply of labour will fall, resulting in an increase in the marginal net product. Hence we cannot ignore the reactions of payment of wages on the supply side.

It should be noted that the theory assumed the existence of perfect competition in the labour market. In real

[2] See before Chap. XXIV.

life, competition in the labour market is seldom perfect. Masters are everywhere in a sort of tacit combination as against labourers. On the other hand, a strong trade union may form a monopoly in the supply of labour. As the market for labour is imperfect, the actual wage-rate will be different from the marginal net product of labour. We should also take account of the improvements in industrial technique and organization, because these have been the principal source of increase of wages. We must also take account of the influence of the simultaneous increase in the supply of other factors, notably of capital, which is after all the normal case. Hence the theory takes many things as constant. It does not, therefore, furnish a complete explanation of wages. It merely "throws into clear light the action of *one* of the causes that govern wages".

Wages and imperfect competition.

Recent advances in wages theory : It is now being increasingly recognized that the labour market is characterised by the existence of imperfect competition. Because of industrial concentration, the total number of buyers of labour is never large, and labour markets are broken up into many sub-markets, in any one of which only a small fraction of the buyers of labour are situated. In the advanced western countries, the selling of labour has been concentrated into monopolies on account of the establishment of strong trade unions. It is the union which bargains collectively with the employers or the employers' organizations to settle the rates of wages. So labour markets are characterized by the presence of monopsony or oligopsony with competitive selling of labour. Or, there may be bilateral monopoly (one trade union negotiating with one employers' association) or bilateral oligopsony (a few buyers of labour dealing with a few trade unions). The actual rates of wages are often the resultant of these influences.

The general effects of monopsony on the pricing of a service supplied by many sellers have already been discussed in Chapter XIX. Let us suppose that a single monopsonist employer in a certain coal area is buying the services of miners. In such cases, the monopsonist will produce a smaller output, pay a lower wage and employ less labour

than a competitive employer would have done. This is due to the fact that as he tries to increase his output by employing more labour, he will have to pay higher wages to draw labour. As a result, his marginal costs will be higher at each wage rate. So he will equate marginal cost with marginal revenue at higher levels. The extent to which wages will be depressed below the marginal net product of labour will increase as the mobility of labour decreases in that market.

The influence of oligopsony (or few buyers) on the wages of labour will depend upon the extent of collusion or concurrence of action among these employers. If there is perfect collusion, the effect on wage rates will be the same as in monopsony. If there is no concurrence of action among them, this will tend to raise wages above the monopsonist level, the actual rates being, however, indeterminate.

Workers are now organized into trade unions, and bargain collectively with the employers. Whether there will be a sellers' monopoly or not will depend on the policy pursued by the union. If the union successfully pursues the method of "closed shop", such a labour monopoly may raise wage rates above the competitive level. If the employers also organize for purposes of labour bargaining, this will give rise to a strictly bilateral monopoly situation. The actual wage rates may then be somewhere between the high limits set by the monopolist seller and the very low levels fixed by the monopolist buyer.[3]

"Wages stand for the marginal discounted product of labour" : This is Prof. Taussig's theory of wages. He would not accept the specific or the marginal productivity theory; for, in his opinion, there is no specific product ascribable either to labour or to capital. There is a joint product—the fruit of the co-operation of labour and capital. From this joint product, it is impossible to isolate the separate contributions of each of the two factors. He would go further and say that capital was itself not a separate factor of production. It was the embodiment of past labour. These

[3] Stigler, *The Theory of Price*, pp. 291-301. A. N. Ross, "The Trade Union as a Wage-Fixing Institution," *American Economic Review*, Sept., 1947, pp. 566-86.

fruits of past labour—the capital-goods—are owned by a separate body of persons,—'capitalist-employers' as he called them. Capital is thus congealed previous labour. Though organization was a separate factor, its rewards "are best regarded as simply a form of wages[4]." Hence the same principles would determine the rewards of past as well as present labour, hired as well as independent labour.

What is meant by marginal output?

Now, labour, past and present, hired and independent, in co-operation with each other produces a joint output on the marginal land, *i.e.*, land on which no rent is paid. Since the marginal land, for economic purposes, makes no contribution to the output, this output he calls the "marginal output" of labour of all kinds. The marginal product can be measured in two ways. It may be the output produced by some specific unit of labour. It can be definitely measured,—"You can put your finger and say, here it is". This is called the *discrete* margin. The other type of marginal product is called "conceptual".. It is the addition to the total output made by "anyone of a number of units, yet from no particular one". When a group of workers is employed in a factory, the total output is increased. But we cannot demarcate the specific product turned out by each labourer. We cannot put our finger on the actual things produced by the worker. But we can measure his marginal output, *i.e.*, the addition made to the total product as a result of employing one worker. The labourers cannot get the full amount of the marginal output. For, production takes time. Labour is a future good in the sense that by employing labour, one cannot get the final product immediately, but only after a period of time. In the meantime the labourers must be supported. It is the function of the capitalist employers to support the labourers by giving them advances. They cannot, therefore, hand over the full amount of the output to the labourers. They would deduct a certain percentage from the final output on account of the advances they have made, and hand

Why is the output discounted?

[4] *Principles.* 3rd Edn. p. 164. Also see p. 131. "The theory of wages should consider the remuneration of every sort of labour . . . . of such independent workmen as well as . . . . of a hired labourer."

over the rest to labour. This deduction, or discount takes place at the current rate of interest. Thus wages are equal to the total product of labour on the marginal land *minus* the amount discounted on account of the advance.

Such is then Taussig's theory of wages. He himself sees two difficulties in his theory. *First,* it is "a dim and abstract one remote from the problems of real life." But, as he himself states, it is no special defect of his theory. All theories of wages—nay, all economic generalizations suffer from this defect. *Secondly,* to come to the more serious objection, the joint product is discounted at the current rate of interest. But according to him, interest depends simply on the excess of what the labourers will produce in the future over what is advanced to them in the present; hence "the rate of interest would *result* from the process of advances to the labourers." Thus the rate of wages and the rate of interest are determined by the same process of advances. Hence if we assume the rate of interest, we know at the same time the rate of wages. To determine wages by discounting at the current rate of interest would be thus arguing in a circle. He meets this difficulty by arguing that we can determine the rate of interest by the rate of time-preference independently of marginal productivity. And with the interest thus determined by time-preference, we can discount the marginal product of labour. But this solution of the difficulty is merely evading the issue thus raised.

Taussig has been criticised on the ground that he is inconsistent. Since he himself states that we cannot determine the marginal product of labour, then how and what would we discount? But this misconceives the true meaning of his theory. Though he used the expression 'marginal product of labour', he did not mean by it the specific product ascribable to labour. He merely meant the joint product of labour, past as well as present, determined at the margin of cultivation, where there is no rent. He used the expression 'marginal' only to exclude any rent element, or any exceptional profit, or monopoly gains.

His theory is a residual claimant theory. That is, it states that after rent, interest and profits are deducted from the total output the remainder goes to labour as wages. As

such, it suffers from all defects of the residual claimant theory.

But the great defect of his theory is that it fails to take account of the influences that determine the supply of labour. It takes the supply of labour as fixed, and then determines its marginal product. In this respect, the theory marks no advance on the marginal productivity theory of wages.[5]

Differences in wages : The usual theories of wages deal with the factors that determine the general rate of wages. They do not take account of the fact that the rates of wages vary greatly from occupation to occupation. What is the explanation of these differences in wages?

Let us start with the following assumptions ; labourers are equally efficient, and the choice of occupations is free and any worker can enter any profession he likes. Will there be any difference of wages under these assumptions? Certainly there will and that on account of the following reasons, which were stated by Adam Smith in an admirable chapter of his book.

(*a*) Agreeableness or diagreeableness of occupations. Wages for a disagreeable occupation must be higher than those for an agreeable occupation, otherwise no one would enter the former occupation. "The most detestable of all employments, that of public executioner, is, in proportion to the quantity of work done, better paid than any common trade whatever."

(*b*) The ease and cheapness of the difficulty and expense of learning it. Some occupations require a longer time to

[5] According to Mr. Hicks, this theory can be held valid if we assume that the period of production is variable. Now one of the factors of production which is necessary to co-operate with labour is circulating capital. Taussig's difficulty arises from the fact that he assumes the period of production as constant. If then the amount of labour slightly increases, there must also be some increase in the amount of circulating capital, even though other factors are kept constant. Hence the cost of this additional circulating capital must be deducted, *i.e.*, discounted from the marginal product. But there is no reason why we should suppose that the period of production is constant. If more labour is then associated with the same amount of circulating capital, the period of production will be shorter. And the additional product need not be discounted as no extra circulating capital is required. Thus it is perfectly correct to explain wages by the theory of discounted marginal productivity. See Hicks, *The Theory of Wages*, p. 17 footnote.

learn, and a much more expensive course of instruction to go through than others. Earnings from such employments must be higher than those from others which require less or no training.

(*c*) The constancy or inconstancy of employment. If work in any occupation is intermittent, the rate of wages must be higher than in occupations where work is constant. In the former occupations workers have to remain idle on occasions, and wages earned during the working period must be high enough to leave a surplus with which they could maintain themselves during the idle period.

(*d*) The small or great trust which must be reposed in those who work. "The wages of goldsmith and jewellers are everywhere superior to those of many other workmen .... on account of the precious materials with which they are entrusted. The salaries of managers of corporations are said to be high because they accept heavy responsibility.

(*e*) The probability or improbability of success. Where there are chances of total failure, the reward must be high enough to cover the risks of failure. But if the occupation holds out hopes for a few great prizes with the coveted distinction of a conspicuous position in the public eye, it usually attracts competitors in such large numbers that the average remuneration may be very low. The best example is that of law.

(*f*) These are the causes of differences in wages, which would persist even if all labour is of equal efficiency, and if there is perfect mobility of labour. But all workers are not equally efficient. And some are endowed with great native ability, while there are others whose ability is of the lowest type. Wages would, therefore, be different, depending upon the ability of the workers.

(9) The assumption that there is perfect mobility of labour, that the workers can enter any occupation is certainly far removed from actual life. Mobility between the different occupations is very imperfect. This is due first to the ignorance of the workers who do not always know the monetary and non-monetary advantages and disadvantages of

Factors determining mobility of labour.

different occupations. Lack of mobility is also due to the fact that most labourers find it difficult to change their places of residence, and cannot always go to distant places in search of higher wages. A third reason is the existence of what is called *specificity*. People who acquire skill for a particular job only cannot suddenly shift to new occupations. A man trained as an electrical engineer cannot take up the job of weaving rugs.

Non-competing groups of labour and wages.

The obstacles to free movement of labour from one occupation to another give rise to the presence of non-competing groups of workers. Society is divided into several fairly distinct groups. A rough examination would divide society into five such groups. The lowest group comprises the common day-labourers. This group is characterised by lack of special skill and special training. The second group is composed of semi-skilled workers, who, while not needing much skill and training, yet bear some responsibility, and must have some alertness of mind. To the third group belong the skilled workmen and the upper group of clerical workers and salesmen. In this class are the expert carpenters, electricians and the like. To the fourth group belong the middle class people. The highest group is that of the professional men and business executives. To this class belong engineers, accountants, lawyers. These various groups are non-competing in the sense that those born or placed in a particular group usually remain there and do not compete with other groups. The barriers between these groups are not impassable; yet these are barriers which only the ablest pass. The influence of environment, the force of example and imitation, family atmosphere—all tend to keep a youth in the occupations to which his parents belong. The children of labourers generally do not get much training and education; and they have also fewer opportunities. On the other hand, the children of the higher income groups get more expensive training and education, and their opportunities are better. The individual belonging to the lower groups may attain to higher groups if he has got more than ordinary ability. This is rare. Hence

the higher the social group, the less crowded it is and its earnings are correspondingly higher.[6]

Why wages of women are lower ? Women as a class get lower wages than men. What is it due to?

One cause of low wages is that they possess, in general, less physical strength and endurance than men. Another cause is that most of the girl workers are not permanent workers. They do not generally take to any profession for good, but only for a limited period, and look forward to marriage. So they take up that sort of work which can be quickly learnt.

But the most important cause of low wages is that very few occupations are open to women. Choice of occupations is not free for them. Custom and lack of training also have shut them out from many occupations. And in those occupations, which are open to women, there is consequently a relative oversupply of workers and hence lower wages.

Lastly, it should be noted that women have weaker bargaining power. They are mostly temporary workers, and they have evidently smaller responsibility for dependents, since they have not, except in unusual cases, to support a family. Hence they are not easily organized into trade unions. They, therefore, get lower wages than men.

[6] For a good discussion of this topic, see K. Boulding, *Economic Analysis*, pp. 196-203.

CHAPTER XXVII

SOME LABOUR PROBLEMS

Trade unions : We have already commented on the peculiarities of the labour supply. Labour has no reserve, and like time, it will not keep. If the labourer withholds his labour it is lost for ever. He must work or starve. He is not in a position to hold out in the hope of exacting a fair price for his labour. Moreover, he has generally an inferior knowledge of the market conditions or of the prospects of trade. He is therefore at a great disadvantage in bargaining with his employer. The trade union is an organization which puts him on a footing of equality with his employers as regards bargaining strength.

A trade union is, according to the classical definition of Sydney and Beatrice Webb, 'a continuous association of wage-earners for the purpose of maintaining or improving the conditions of the employment.' The functions of a trade union are therefore to maintain the position and conserve the advantages already gained by the workers and secondly, to attempt to advance the cause of the members. It is a *militant organization* designed to fight for the cause of the worker. It is also a *ministrant association*, a benefit organization, providing sickness and accident benefits, supporting the worker when he is temporarily out of work.

Trade unions and wages : The main concern of the trade unions is still with the question of wages. Originally it was thought, especially by the labour leaders, that the trade unions helped workers to obtain higher wages. They neutralise the bargaining weakness of the wage-earners and enable them to exact higher wages from the employers. On the other hand, it was argued by the classical economists that trade unions could do nothing to increase the level of wages. If wages are maintained at an artificially higher level profits will shrink ; savings will fall off and businessmen will be unwilling to continue in business any more. As a result, the rate of wages will fall.

Can they raise the general level of wages?

Trade unions may affect the general level of wages in two ways. First, they help the workers to obtain the full value of their marginal net products from the employers. Under perfect competition, the rate of wages will tend to equal the marginal net product of the labourers. But competition is seldom perfect in the labour market. The weak bargaining power of the worker makes it improbable that in all cases he will get his true marginal worth. The trade unions will correct his bargaining weakness, and so enable him to raise his wages to the level of the full value of his marginal net product. Secondly, trade unions may help in increasing the marginal productivity of the workers. It should be noted that the marginal productivity of labour depends also on the efficiency of the employers, *i.e.*, on the proportion in which labour is combined with capital, natural resources and other agents of production. The efficiency of different employers is different. There is therefore always the possibility of increasing the productivity of labour by screwing up less efficient entrepreneurs to the level of the more efficient. In this way they may be successful in driving up the general rate of wages. A fall in the rate of profit on invested capital may induce businessmen to continue longer in business, or to put forth greater enterprise and efficiency so as to lead to a general improvement in the organization and management of the whole industry. The trade unions may alter the marginal productivity of labour indirectly by influencing efficiency of the wage-earners. They may foster habits of sobriety, honesty, etc., and help the younger generation to acquire industrial skill. As the efficiency of the workers increases, their marginal product and wages will also rise.

Or of a particular group?

Lastly, a trade union may be able to increase the marginal productivity of a particular group of labourers, by suitably restricting its supply. The conditions under which it will be able to do so have already been stated in our discussion of the case of joint demand. First, the demand for that group must be inelastic. In other words, the success or the failure of a trade union will depend on the elasticity of

substitution. The more easily the employers can substitute that kind of labour by other resources (say, by substituting machines for labour), the less will be the power of the union to force its demand. Secondly, the demand for the commodity which that group helps to produce must also be inelastic; thirdly, the total wages of that group must form a very small part of the total costs; and fourthly, other factors are 'squeezable.' If any of these conditions is fulfilled, a particular group may be in a position to raise its wages. But in the long run, it is doubtful whether it will succeed in its purpose. The high cost of employing labour will induce the employers to search for substitutes, or to invent machinery for doing the work done by that group. The demand for labour will fall off, and so also its rate of wages.

Right to strike: The main fighting weapon of the trade unions is the strike. Just as the employers can terrorise the workers by the threat of discharge, so the trade unions can force the hands of the businessmen by their threat of strike. The right to strike is therefore the counterpart to the right of discharge.

Is there an unqualified right to strike?

"A strike is a concerted withdrawal from work with the design of securing return to the same employment under better conditions than are offered at the time by employers." The aim of the strikers is to go back to their old jobs again on their own terms. Around the question of the right to strike, a great controversy is still going on. In private employments, there is no doubt that the workers should possess full freedom of going on strike when they think that the conditions of employment are unbearable and the employers are adamant with regard to the claims of the workers. But what about the right to strike in public and quasi-public industries? It is argued that a strike and the consequent cessation of work in one of the essential public services, like the railways, water supply, etc., cannot be countenanced by the community. There is no doubt that the community is entitled to see that the operation of the vital industries is not paralysed. In return, it must guarantee to the workers reasonable conditions of employment. It must open up effective channels through

which the grievances of the workers will be given proper hearing and properly redressed. It must organize, if possible, joint committees, or work councils composed of the representatives of workers and employers so that the former would have a voice in the determination of the conditions of work. The right to strike is not an inherent right, but a right limited by the greater right of the community.

Agencies for industrial peace : The evil effects of strikes and the losses they entail both upon employers and employees are obvious. Is it not better, on the principle that prevention is better than cure, to organize business relations in such a way that the necessity of strikes is minimised? Among the schemes that have been suggested as remedial measures the prominent are profit-sharing, sliding scales, and work councils.

(a) *Profit-sharing*: It is a method whereby the employees receive a portion of the profits of any business concern. The surplus that remains after deducting the expenses of a business is shared between employers and employees either in proportion to fifty-fifty, or in proportion which the total interest bears to the total wages. Sometimes, the shares of workers are not handed over to them directly, but invested in the business to the account of the workers.

Much was at first expected from this scheme. It was thought that it would bind the worker more closely to the firm ; that it would improve business relations, and minimise industrial disputes ; that it would provide a greater incentive to the labourers to increase their output, not to waste materials and to be more careful about the machinery. In this way, the output will increase to the benefit of the employers, employees and society. But these expectations have not materialized. It has not prevented strikes from occurring. It is disliked by the trade unionists because it is usually adopted with a view to weaken the trade unions and to wean away the workers from their unions. Moreover, it is argued that profit-sharing must involve loss-sharing. Profits do not always depend on the efficiency of workers and employers, but on other factors as well. For example, a slight fall in the price may wipe out the profits altogether. Since the workers are paid a share of the profits, they must also

take a share of the losses too. The prospect for the wide-spread development of methods of profit-sharing is not therefore very great.

(b) *Sliding scales*: The essence of these schemes is that the rate of wages should vary with changes in the price of the product in accordance with a previously stipulated ratio. There is generally a basic rate of wages correlated to a basic price. If the price rises, wages would rise by a given proportion. In this way the workers are made to share in the good and bad times of the business. There is generally a minimum rate below which wages shall not be allowed to fall. Sometimes, the sliding scale is based upon profit. If the profits rise above a certain percentage, the wages should also rise by a given degree. It may also be based on the cost-of-living index-numbers. If the cost-of-living rises, wages should automatically rise.

The sliding scales have been criticised on the ground that "there seems no valid reason why the wage-earner should voluntarily put himself in a position in which any improvement of productive methods, any cheapening of cost of carriage, and advance in commercial organization, any lessening of the risks of business, any lightening of the taxes or other burdens upon industry, and any fall in the rate of interest—all of which are calculated to lower price—should automatically cause a shrinking of his wage." This shows the necessity for revising the basic rate of wages when the fundamental business conditions undergo changes. The adoption of sliding scales would remove some of the difficulties of the wages question.

(c) *Works council*: The essence of this scheme lies in the recognition of the claim of the workers to a share in the determination of the conditions of employment. It was first formulated in the report of the famous Whitley Committee of England in 1917. First, works committee are organized in each firm, composed usually of equal number of representatives of workers and employers. Sometimes they consist only of representatives of workers with opportunities of ready access to the head of management. Regular joint meetings are held at which all outstanding questions are discussed. Secondly, District

Whitley Councils.

Councils are organized composed of the representatives of trade unions and of employers in the industry.

The Works Committees, also known as Whitley Councils, have tended to produce greater harmony among workers and employers. By associating the worker with some aspect of the actual conduct of business, they have tended to develop a greater sense of responsibility among the workers. Disputes seldom reach the breaking point, and are settled by voluntary discussion before they reach the breaking point.

Settlement of disputes : But in spite of the best endeavour, industrial disputes will sometimes occur. Therefore some machinery must be devised whereby these disputes can be settled. The two outstanding methods are conciliation and arbitration.

(a) **Conciliation :** The essence of the scheme of conciliation is that the two parties to a dispute should come together, discuss and finally settle their disputes. Since it may be difficult to obtain the consent of the parties to the appointment of a Joint Board at the time when the dispute has already broken out, it is better to have Permanent Boards of Conciliation for the settlement of differences. In India, the Industrial Disputes Act of 1947 gave the Government the power to appoint a Conciliation Board to enquire into any dispute on the application of one of the parties. Given sufficient goodwill on both sides, these Boards may prove useful.

(b) **Arbitration :** The central idea of the schemes of arbitration is that the disputes are referred to an outside authority for decision. Arbitration may be public or private. It may be voluntary or compulsory ; *i.e.*, the parties may or may not be obliged by law to refer their disputes to arbitration. Lastly, the decision of the board of arbitration may not be binding upon the parties or may be legally binding upon both.

If the parties privately agree upon referring their disputes to an Arbitration Board and upon abiding by its decision, much is gained thereby. There is also a vast gain in pride and temper ; "it enables parties to withdraw without loss of pride from the bellicose attitude."

Under public arbitration, the government may simply appoint *an arbitration board* on the request of the parties or may require both to refer disputes to a Board before any strike or lock-out. The Board first tries to bring about a settlement between the parties; failing, it conducts a thorough investigation into the dispute and publishes a report containing its recommendations. The recommendations may not be binding upon the parties. But it is urged that the pressure of public opinion will force the parties to accept them. In Australia and New Zealand the recommendations are binding upon the parties. A strike or a lock-out is punishable by fine or imprisonment. But it may be difficult to enforce such decisions in the face of strong opposition from any group.

CHAPTER XXVIII

PROFITS

The term, "profit" is usually understood to mean the difference between the total sale-proceeds obtained by a businessman and the total expenses of production. It is the surplus that remains in the hands of the businessman after paying rent, wages, interest on borrowed capital, etc. This profit is regarded by the economists as *gross profit.* It includes many things which, according to the economists, should not be classified as profits. Gross profits, or the difference between the total sale-proceeds and the actual outlay on capital, etc., include:—(a) *rent on land,* owned by the employer himself, and the difference between economic rent and the actual rent paid in respect of other lands. A person may not always pay the full economic rent in respect of a land held by him, and his profits are thus swollen by such excess gains. (b) *Interest on capital.* The interest that the employer has to pay on the borrowed capital is usually deducted by him from his gross sale-proceeds before determining his gross profits. But he does not always deduct the interest on his own capital that he has invested in his business. (c) *The remuneration of the entrepreneurs as such.* The sum that remains after deducing the former two items is the proper income of the entrepreneur.

Earnings of management and profit.

Even this income that remains after deducting the first two items is not regarded as profit by the economists. According to them, this income includes the earnings of management, *i.e.,* the entrepreneur's remuneration for managing, organising and co-ordinating the work of the concern. This remuneration is equal to the sum which the businessman would have obtained, had he been employed in suitable work by someone else. Hence this income should be classed not as profit, but as wages. These earnings of management are best regarded as a part of the normal cost of production. Profit is the difference between price

and the normal cost of production. This will be evident if we study the profits of a joint-stock company. In such a company, the actual work of managing and superintending the business is entrusted to salaried managers. The salaries of these managers are included in expenses. The profits that are distributed among the shareholders do not, therefore, include earnings of management.

Elements in profit.

Profits are, therefore, the income which the entrepreneur obtains on the following counts. First, profits include some reward for risk-taking and uncertainty-bearing. One of the main functions of the entrepreneur is to assume the risks of production. And for this risk-taking he gets some income. Secondly, profits include some income which the business-men manage to secure either on account of their monopolistic control over the supply, or because of the existence of imperfect competition. In real life, every businessman is often able to secure some monopolistic or semi-monopolistic control over the markets. Hence he is often in a position to charge a slightly higher price than would be possible under perfect competition. He, therefore, earns some extra income. The existence of market imperfections may swell the profits in another way. Competition in the market for labour or for any other factor of production may be, and is often, imperfect, as a result of which the employer is in a position to exploit the situation and pay those factors an amount of remuneration which is less than the values of their respective marginal net products. Thirdly, profits often contain large amounts of fortuitous gains. These gains arise from mere good luck in certain enterprises. A sudden shift in demand may drive up prices, and so may bring large gains to the entrepreneurs.

Theories of profit : The doctrine of profits is the most unsatisfactory part of economic theory. It is an elusive, uncertain income which defies attempts at definition. Various theories have been advanced to explain the nature of profit. We shall examine them one by one.

Rent theory of profit : This theory was first developed by Francis. A. Walker. He first introduced the distinction

between a capitalist and an entrepreneur into English economic theory. The possession of capital is not the indispensable qualification of an entrepreneur. An entrepreneur is a person who only manages his business without advancing any capital.

Profits—the result of superior ability.

According to Walker, profit is the rent of ability. Like the differences in the fertility of different grades of land, the abilities of different businessmen are also different. There are entrepreneurs, like Ford, who belong to the ablest grade of producers. At the bottom, there are entrepreneurs who barely manage to cover their costs of production. And in between these two classes there are infinite gradations of ability. Just as rent arises because of some differential advantage, either of fertility, or of situation, possessed by a piece of land, so profits arise because of some exceptional ability or exceptional opportunity of the entrepreneur. Like the no-rent or the marginal land there is also the no-profit, or the marginal entrepreneur, who just manages to cover his costs of production by selling his output at the current prices. His abilities are marginal. Entrepreneurs of higher abilities earn profit, which is measured from the no-profit level. Hence profits, like rent, do not enter into the price of the product.

It should be noted that, according to Walker, the wages of management, *i.e.*, the amount which the entrepreneur could have earned as a salaried manager in a competitive market, should not be included in profits. "Profits not in excess of wages we have agreed to consider no profits at all." Hence the criticism of Walker's theory on the ground that there cannot exist a no-profit entrepreneur, because everybody must obtain normal earnings in the long run is beside the point.

The theory may provide a measure of profit, but it does not provide an explanation of the nature of profit. The most serious criticism of the theory is that it overlooks the important function of the entrepreneur as a risk-bearer. From the profits of the entrepreneurs, we must deduct the losses sustained by some others, who have been driven to bankruptcy. When this is done, there will be found no surplus

element in profit, and the analogy to rent vanishes. Moreover, it fails to explain the profit of the ordinary shareholder of a joint-stock company. Another most fundamental criticism is that the theory does not even explain the main causes of the size of profits. The differential gain arises because of the scarcity of the superior units, either of land, or of entrepreneurs. But the real thing is the explanation of the causes of the scarcity of the superior units. In the case of the rent of land, the point is not of great importance because the limitation is due to nature. But the analysis of the causes that limit the supply of the superior entrepreneurs will furnish the real key to the problem of profits. "Hence the rent theory of profits can throw no light on the fundamental questions."

Moreover, it cannot be said that profits do not enter into price. The reward for risk-bearing must enter into long-period cost of production. In the short-period, profits may not enter into price. But in the long run, the supply of entrepreneurs being not fixed by nature, the normal profits must form part of the cost of production.

Profits and wages : A large group of economists regard profits as remuneration for the exercise of business ability. Taussig and Davenport are the two most prominent advocates of the theory. Profits, according to Taussig, "are best regarded simply as a form of wages." The business-man's income is extremely irregular, and is a surplus that remains after meeting the expenses of production. Yet it is not due to chance. Continued success is due to the possession of some qualities,—skill and ability in organization and shrewdness in meeting risks. The reward for these qualities is profit, and rewards are analogous to wages owing primarily to two reasons. First, the entrepreneur's activity as such is still a form of labour,—a sort of mental labour, marked perhaps by many peculiarities, among which the most striking ones are manifest in undertaking risks and uncertainties. The barrister's and the physician's earnings are classed as wages, though the predominant elements in their activities are more or less mental,—shrewdness, judgment,

Profits are determined in the same way as wages.

etc. The entrepreneur's abilities are almost of a similar sort, and hence profits should be regarded as wages. Secondly, "salaried posts of management have a very wide range—foremen, superintendents, general managers, presidents. A process of transfer is constantly taking place between the salaried ranks and the independent business managers. Both are affected by causes of the same sort." Hence the theory of wages "should consider the remuneration of every sort of labour .... of such independent workmen as well as .... of a hired labourer."

The theory furnishes both an explanation of the nature of profit, as well as a justification of profits. But it overlooks the real distinction between profits and wages. Wages are fixed and stipulated incomes; profit is an irregular, uncertain income.

There are at least three reasons why profits should be distinguished from wages. First, the most prominent function of the entrepreneur is the assumption of risks and uncertainties. The wage-earners have of course to assume some risks. The industry for which they have been trained may be declining, and so they may lose their jobs. But the risks of the businessman are much larger in number and greater in intensity than those of the workers. Secondly, the element of chance or fortuitous gains forms a greater portion of profits than of wages. In other words, the true earnings of effort form a very large part of wages, and often a small part of profits. Lastly, profits are often swollen on account of the imperfections of competition, whereas imperfect competition often tends to depress wages below the marginal net product. Selling in an imperfect market the businessman is often able to charge slightly higher prices than would be possible under perfect competition. The error of identifying profits with wages becomes apparent when we analyse the net incomes of joint-stock companies. Their profits and earnings of management are essentially different. The ordinary shareholders do not exercise any particular function in connection with the business. They are predominantly risk-bearers. Owing to these reasons "there is a scientific necessity for treating differently profits and wages."

Risk-bearing and profits : Almost every writer is agreed that profits arise because of the risks inherent in the productive organization. Hawley's name is prominently associated with this theory. According to him, the most essential function of the entrepreneur is risk-taking. Risks are inherent in all business, and the assumption of risks is necessary if production is to continue. But the bearing of risks is unpleasant and irksome. Hence risks would not be borne without the expectation of a reward. Profits are the reward for the risks that the entrepreneur bears. And the remuneration must be something more than the average normal return on the capital risked. For, no one would subject himself to risks if, on the average, he gets only the normal return to be obtained from safe investments. Hence the reward for risk-taking must be higher than the actuarial or the average value of the risks borne.

Profits are the reward for risk-taking.

Moreover, the risks will act as a deterrent to the entrance of men into the enterprises. In this way, the supply of entrepreneurs willing to embark on risky businesses is diminished, and those who venture and survive, secure an excess return because of the limitation of competition.

Very few economists would deny that profits include remuneration for risk-taking. But that does not mean that risks should take the whole stage to the exclusion of others. Profits, of course, go to the person who assumes risks, but do not go only as compensation for the risks in proportion to their magnitudes. On the other hand, as Carver points out,[1] profits arise not because risks are borne, but because the superior entrepreneurs are able to reduce risks. Hence paradoxically it may be said that businessmen get profit not because of the risks they bear, but because of the risks they do not bear. Further, according to Knight, not all kinds of risks give rise to profit. There are certain risks which are 'known' in the sense that their average incidence can be measured by statistical methods. For example, the average risk of death in a community can be statistically determined,

[1] Carver, *Distribution of Wealth*, p. 274.

and a sum can be fixed as premium to cover such risks. There are other risks whose incidence is unknown, *i.e.*, not determinable by statistical methods. The remuneration, or premium for known risks is not profit but is included in the costs of a business; whereas profits are a surplus above costs. Profits arise on account of the assumption of *unknown* risks. Lastly, it is doubtful how far there is a real cost of risk-taking. There seems to be little evidence to show that the bulk of the entrepreneurs must be paid some additional reward so as to induce them to take up a risky business. All that is necessary is that they should know that they *may* make large profits in such businesses. Many people remain in business because they value their independence. They wish to give orders, not to receive them. That such a position may be attended with risks may not deter them from managing their own business.

Uncertainty-bearing and profit: Modern theories of profit maintain an inevitable connection between profit and uncertainty-bearing. The assumption of uncertainty, like that of waiting, is a disutility and must therefore be rewarded. Just as it is the function of the capitalist to supply waiting, so it is the peculiar function of the entrepreneur to bear the uncertainties of production. Profit, the income of the entrepreneur, is therefore the reward for uncertainty-bearing.

Distinction between risk and uncertainty.

Uncertainty has been defined by one writer as "the expectation of the irregularity of income." Knight makes a distinction between risks and uncertainties in this way. Not all kinds of risks give rise to uncertainty. There are some risks, *e.g.*, the risks of death, whose average incidence in a community is statistically measurable, and to cover which a premium may be fixed. These are 'risks' proper, and do not generate a feeling of uncertainty. There are, however, other risks which cannot be foreseen, or measured in that way. These risks give rise to uncertainties. And in order to induce people to shoulder these risks, we must offer them a reward over and above that expected in industries where there are no uncertainties. That reward is profit.

Uncertainty-bearing has been regarded as a factor of production like waiting. The unit of uncertainty-bearing has been defined by Pigou as "the exposure of one pound to a given scheme of uncertainty in an act the consummation of which occupies a year." The demand for various units of uncertainty-bearing comes because they are productive. This productivity of uncertainty-bearing is best illustrated by Pigou's example of breaking the vases. Uncertainty-bearing, *i.e.*, people's willingness to assume uncertainties has a supply price, depending (*a*) on the character of the entrepreneurs. Men of cautious temperament will be attracted only by a very high reward, while gamblers will rush in where wise men will fear to tread. It depends (*b*) also on the total amount of resources possessed by investors, and (*c*) on the proportion of these resources to be exposed. Richer persons are more willing to venture into risky investments. When a business requires the investment of a smaller proportion of the total resources, a person may be willing to risk it for a smaller reward, while he will expect a higher profit when it will absorb a greater part of his capital.

Uncertainty-bearing is a factor of production.

Moreover, uncertainty-bearing as a factor is seldom found in isolation. One must have something to lose when one is assuming risks. That something is generally capital. This association of uncertainty-bearing with capital is another source of profit. In many cases it is difficult to find a combination of these two factors. Men who are willing to assume risks may not possess capital, while rich persons may prefer safe investments. Persons who combine these two thus possess a strategic advantage and earn some revenue which is of the nature of quasi-rent.

The first criticism that has been urged against this theory is that uncertainty-bearing is not a separate factor of production. If only we accept the doctrine of real cost,—that all costs are ultimately reducible into pains or disutilities, then we can rank it as a separate factor. But modern opinion is not inclined to accept the doctrine of real costs. The fact that labourers working in disagreeable circumstances may obtain higher wages does not constitute disagreeableness into a separate factor. So the fact that entrepreneurs have to

produce in uncertain circumstances does not constitute uncertainty-bearing as a separate factor. It is merely a characteristic of the entrepreneur-functions,—a characteristic which results in increasing the supply-price of capital and enterprise. In a risky business, people expect a higher reward. That is all.

Further, uncertainty-bearing cannot furnish the sole explanation of profit. It may be the most distinctive function of entrepreneurs, but it is not the only function. There are also other features,—the entrepreneur's capacity for co-ordination and innovation for which a reward is expected. Lastly, uncertainty-bearing is only one of the forces that limit the supply of the entrepreneur class. There are also other influences, *e.g.*, the different elements of social stratification, and the environment which are as patent in limiting the supply of entrepreneurs as uncertainty-bearing.

Marginal productivity and profit : The remuneration of every factor of production is determined by the theory of marginal productivity. The employer's remuneration is taken to be due to his business ability. Profits would tend to equal the marginal net product of one unit of the factor —organization. The marginal net product is "the amount which the community is able to produce with his help over and above what it could produce without his help." Writing in the Economic Journal, Chapman[2]—came to the conclusion that profits tended to equal the marginal social worth of the employers, in exactly the same sense in which the labourer got his marginal net product to the employer. The only difference is that the marginal net product of a workmen is determined directly, whereas "the forces bearing upon the employer's remuneration operate indirectly and more tardily." Edgeworth arrived at the same conclusion by another process. "Normally it may be presumed that an independent entrepreneur does not make less than a manager of like abilities, and perhaps he does not make more ..... If the remuneration of the manager is just equal to the amount which he produces, then the remuneration of the entrepreneur is not very different from the amount he produces".[3]

[2] Remuneration of Employers. *Economic Journal,* Dec., 1906.
[3] *Papers relating to Political Economy.* Vol. I, p. 30.

The main difficulty about explaining profit by marginal productivity is that the unit of the factor, organization, is not infinitesimally small. Rather it is inconveniently large. And so the withdrawal of one entrepreneur might mean the disorganization of the whole business. It becomes difficult to measure the marginal net product of the services of the entrepreneur. Moreover, while the productivity of other factors is measured directly by the entrepreneurs, that of entrepreneurs themselves is measured indirectly, 'in a more haphazard fashion by the immediate action of their own competition.' Hence the measurement is not exact, if not impossible.

The dynamic theory of profit : J. B. Clark, the celebrated American economist, explained profits by saying that it was due solely to dynamic changes. The function of the entrepreneur, according to him, was quite distinct from that of the labour of management and superintendence, or from that of the risk-bearer. It is the function of the pioneer—the creative agent who is instrumental in effecting changes in the economic organization.

Profits solely due to dynamic changes.

Profit is the difference between the selling price and the cost. If competition works out its full effect, and no new changes occur in the economic organization, each factor would secure what it would produce, and the selling price would be equal to the cost. Hence there would be no profit above the wages of superintendence. *Profits, therefore, tend to disappear in the static state.* In the static state, Clark assumed five kinds of changes to be absent. First, there is no increase in the number of population ; secondly, the supply of capital is not increasing ; thirdly, the methods of production do not change ; fourthly, the forms of business organization remain the same ; and lastly, the wants of the consumers are not modified. In such a static state, the price would always be equal to the cost of production of each commodity. Profits, being the surplus above cost, would vanish.

Profits disappear in static state.

But it is the special function of the entrepreneur to disturb this equilibrium. An entrepreneur, by means of his

superior co-ordinating ability, will lower the costs and thus secure profit. The typical dynamic change is an invention. The adoption of an invention will enable the entrepreneur to produce at a lower cost. He obtains a profit. But sooner or later, competition sets in ; other entrepreneurs adopt the invention ; output increases ; and price falls. Moreover, owing to the competition of the entrepreneurs, the rates of wages and interest rise. That means that the costs rise also, until the costs and the price become equal ; profit then disappears. Profits are thus unstable and temporary. They are the offspring of change as also the incentive of changes. The pioneer-entrepreneur, who boldly dashes out into a new path enjoys a surplus temporarily. But soon the competition of others forces him to surrender his profit to the community, either in the form of higher wages, or higher interests or lower prices.

"The ultimate goal of the whole movement (of any dynamic change) is a no-profit state." In the stationary state therefore, where frictionless competition exists, profits would tend to a minimum. In actual life, however, changes are constantly occurring, and the influence of competition is impeded by constant friction. Entrepreneurs, therefore, are always able to secure profits.

One criticism of the theory that has been advanced by F. A. Knight is that not all types of dynamic changes give rise to profit. Changes which happen regularly, and which are, therefore, foreknown would be discounted in advance, in the same way as the average incidence of death in a community is statistically determined and a premium is fixed for those risks. The financial results of these foreseen changes will be determined and included in the costs. It is only those changes which cannot be foreseen, and which are unpredictable that give rise to profit. Taussig criticises this theory on the ground that it makes an artificial distinction between profit and earnings of management. "Even the routine conduct of established industries calls for judgment and administrative capacity, and for the exercise of the same faculties that are more conspicuously and more profitably exercised under conditions of rapid progress".[4] In the static

[4] Taussig. *Principles*, Vol. II, p. 129.

state, the entrepreneurs would secure wages of management. The reward for risk-taking would disappear if risks are non-existent in such a state. The major part of the risks would not of course exist; but a certain number of risks, for example, the risks of loss by fire, by the negligence of producers, or the risks of defalcation by employees, (*i.e.*, Marshall's personal risks) would remain, and a reward must be given for their assumption.

Conclusion : The defect of all these theories is that they lay emphasis on particular aspects of the functions of the entrepreneurs to the exclusion of others. Profit, however, is not a homogeneous income. The entrepreneur performs not one function, but a composite function, *e.g.*, risk-taking, uncertainty-bearing, planning, selecting, deciding, etc. Hence no single theory would be adequate to explain the true nature of profit. Moreover, mere analysis of the functions of the entrepreneurs, as is done in the theories, cannot explain the emergence of profits. The true theory of profit must also explain why the supply of entrepreneurs is limited. For, if capable businessmen were as plentiful as manual labourers now are, their reward would not be much higher than the common day-labourer's wages in spite of their performance of various functions. But to explain why the supply of entrepreneurs is limited is to explain the present social organization and the present social stratification. It must explain why qualities essential to entrepreneur function, *viz.*, imagination, judgment, skill and ability in organization, shrewdness in meeting risks, a certain courageous self-confidence, are limited; how much of this limitation is due to natural causes, and how much due to environmental causes. The theory must also explain why prices sometimes rise above costs and give a windfall profit. Clark's emphasis on dynamic changes is valuable in this respect. Some attention must also be given to the courses of monetary or cyclical disturbances which leave in their trail profits or losses. The theory of profit must, therefore, touch at one point, the facts of social stratification, and at the other point, the theory of money.

Justification of profit : At the hands of socialists, profits have been severely criticised. All value, according to Marx,

is due to labour, and must go to labour. The surplus value, which is profit, is something taken away from the shares of labour. Profit is therefore "legalised robbery."

Some elements in profit cannot be justified.

There is no doubt that there are many elments in actual profits, which cannot be defended. The employer may swell his profits by paying to the labourers less than their marginal worth, or by 'sweating' the helpless workmen. Privileges yielding valuable financial benefits may be obtained dishonestly. The industrialists may bribe the legislators into passing tariff legislation. On the stock exchange gambling and unscrupulous manipulation of the market may enable persons to become rich. Monopoly profits may be secured which are in many ways unjustifiable. There are innumerable other ways in which large sums can be collected by foul means. Nothing can be said in defence of these types of profits. They result often from the low commercial morality of the people. The proper remedy for such practices is full freedom of competition and the improvement in the moral spirit of the public.

But the condemnation of these types of profits does not also mean the condemnation of normal profits earned by honest work. They are the inevitable outcome of the institution of private property. Just as you must pay people for waiting, so you must also pay them for risk-taking and uncertainty-bearing. The entrepreneur, by assuming risks, and by directing the productive organization, renders useful services to the society for which he must be paid. The services of businessmen are no less valuable than those of workers. By his superior organising ability, by his boldness and sagacity in shouldering risks, an entrepreneur increases the productivity of the economic organization by a greater ratio than would have been possible otherwise. Profits have been the spur to progress under the present organization of society and to stop profits would mean the abolition of progress. Of course if we abolish private property, the payment of profits will not be necessary. But the abolition of private property raises other questions which will have to be discussed in another place.

CHAPTER XXIX

THE DISTRIBUTION OF INCOME

We have discussed how the share of each factor of production is determined. This study of functional distribution is quite distinct from that of personal distribution. An individual may derive his income from several sources. His income may be partly rent, and partly interest, wages or profits. A study of the distribution of the national income among the individuals of a country is highly significant for certain purposes. It will enable us to know the answers to the questions as to the material conditions of the masses.

Personal distribution.

One fact which stands out prominent in connection with our study of the distribution of personal incomes is the extreme inequality of incomes. This is borne out by the studies in the distribution of incomes in various countries. From the figures collected by Lord Stamp in his *Wealth and Taxable Capacity,* we find that the richest 1·3 per cent of the income receivers of England possessed 24·2 per cent of the incomes in 1920, while 71·3 per cent of the income-receivers received only 29 per cent of the total income. In all, nearly 95 per cent of the income-receivers obtained barely 60 per cent of the total, while 40 per cent was taken by less than 5 per cent of the income-receivers. This is also borne out by the statistics of income distribution in the U.S.N. In 1926, the lowest income group included 2·89 per cent of the people, and they received only ·31 per cent of the total incomes. On the other hand, the richest 1 per cent received 18 per cent of the total, while nearly 48·4 per cent of the lowest income-receivers received barely the same amount. In India, according to the estimate made by Shah and Khambata in 1913, 5 per cent of population of British India enjoyed one-third of the national income. Another one-third of the national income was taken away by 35 per cent of the

Inequality of incomes.

population. 60 per cent of the people obtained about 30 per cent of the total income of the country.

There is another fact to be noted in this connection. According to the findings of Stamp and Bowley in England, the relative distribution of the national income has remained substantially the same for the last hundred years. The increase in the *per capita* incomes which occurred during this period was shared almost equally by all classes. In other words, while the rich becoming richer, the poor are not becoming poorer.

The distribution of wealth is also very unequal. In the U.S.A., according to the figures published by W. J. King,[1] 57 per cent of the adults who died between 1921-1923 left no property to be probated. 24·79 per cent of the dead left property worth less than $1,000 each. 37·6 per cent, left property worth between $1,000 to $5,000, while 2·2 per cent left property worth over $100,000. In England, 94 per cent of the property-holders own less than £1,000 worth of property. The wealthiest 2 per cent own 67 per cent of the total wealth.

Inequalities of incomes may be said to be based on the inequalities in the distribution of wealth. But such need not be the case. Many professional men may earn high incomes, but they may not possess large properties. The cultivators possess some property in the form of land and live-stock. But their incomes are usually very low. It should be noted that such extremes in the distribution of incomes do not mean the same difference in the scales of consumption. The upper and the middle classes consume a relatively small portion of their incomes, and save a large portion of the income. So the scales of consumption do not show the same wide divergence as those of incomes. Nevertheless such inequalities of income lead to the growth of inequalities in the distribution of wealth or property.

Such inequality of incomes means a grave danger to the peace and progress of the society. Persons with large incomes are able to control the course of production. They own the factories, the mines, etc. Thus a small number of persons

have the power to control the destiny of the millions who possess no property and so must accept jobs at the bidding of the rich. The state of affairs is incompatible with democratic principles which are based fundamentally on the equality of men. Such extreme inequality introduces an element of instability in the social order. As Aristotle pointed out long ago, there is no more potent cause of revolutions than extreme inequalities.

Causes of inequality.

The main causes of such inequality of incomes are three. The cause is, *first*, the difference in the natural abilities possessed by different men. The men who are gifted with high natural abilities succeed in earning high incomes. *Secondly*, the differences in incomes are perpetuated through the system of inheritance. When the successful businessman dies, he leaves behind him a vast property which is inherited by his heirs. *Lastly*, the system is also perpetuated because of the influence of environment and opportunity. Those who inherit property also inherit new and better opportunities in life. They are likely to secure higher incomes.

Steps for reduction of inequality.

The baneful effects of such inequality are admitted by the vast majority of writers. All progressive states have taken steps to reduce this inequality of incomes because taxes are levied at steeply progressive rates, taking a large slice of the income in taxes as the income rises. Transfer of property after death is heavily taxed through death duties with the result that the largest accumulations of property are substantially reduced. The resources that are taken from the richer classes through taxes are spent by the governments in bringing increased benefits to the poorer classes. Old age pensions, sickness insurance schemes, maternity benefits, free schooling and free food to the poor school children,—these and many other methods are adopted by the modern states to ease the lot of the unfortunate section of the population. Minimum wages laws have been passed to assure at least living wage to the workers. Powers of the monopolists are strictly controlled so as to prevent the growth of monopoly profits, one important source of great fortunes.

CHAPTER XXVIII

THE NATURE AND FUNCTIONS OF MONEY

Definition of money : Money is a concept which we all understand, but which it is not easy to define in exact terms. Most definitions of money take as their starting point, not the substance, but the functions of money. 'Money is that which money does.' Any particular thing is money if it serves the primary function of money, *i.e.,* if it serves as the medium of exchange. Thus anything which has general acceptability, which passes readily from hand to hand in the settlement of debts and transactions is money.

Advantages of the use of money.

Inconveniences of barter : The advantages or uses of money are best understood by considering the system in which money is absent. Such a system takes the form of barter,—the direct exchange of goods against goods. What are the inherent difficulties of such a system? The *first* difficulty is the lack of coincidence in the wants of buyers and sellers. The producer of jute may want shoes in exchange for his jute. But he may find it difficult to get hold of a shoe-maker who is also willing to exchange shoes for jute. The *second* difficulty under the barter system is the absence of means of sub-division. How to exchange goods of unequal value? A shoe-maker probably wants a loaf in exchange of his shoes, but the exchange value of a piece of loaf is but a fraction of that of a pair of shoes. Shoes cannot be sub-divided without destroying their value. *Thirdly,* there is a want of a measure of value in a barter economy. Each article must have as many different values as there are other articles for which it is to be exchanged. When thousands of commodities are produced and exchanged there will be an infinite number of exchange ratios. Want of a common denominator by which to express exchange ratios is keenly felt by everybody at this stage. Money obviates all these difficulties.

Functions of money : The functions of money are manifold. To quote a well-known couplet,

"Money is a matter of functions four
A medium, a measure, a standard, a store."

(a) Medium of exchange.

The first and foremost function of money is that it serves as a *medium of exchange.* Instead of exchanging goods for goods, goods are exchanged for money. The lack of double coincidence of wants, which is the chief stumbling block in barter, is wholly eliminated in a money economy. The producer of a commodity sells it for money and distributes his income among different things so as to get maximum satisfaction out of his income. Money as a commodity not only helps the consumer, it also helps the producer. It enables a producer to concentrate his attention solely on his occupation and thus to add more effectively to the general flow of goods and services which constitutes the real income of the society.

(b) Standard of value.

The second function of money is that it serves as a measure or *standard of value.* The value of each commodity is expressed in terms of money—a common denominator. The exchange of all articles is facilitated in this way. Money is the measuring rod for measurement of the value of each commodity. The ideal standard of measurement is one in which the measure is a stable one for all times to come. As one foot indicates a certain amount of length, as one pound indicates a certain amount of weight for all times to come, so a unit of money expresses a certain amount of value. But the fundamental defect of money as compared with other standards of measurement is that the value of a unit of money fluctuates from time to time, and thus is not an ideal standard of measurement.

(c) Standard of deferred payments.

The third function of money is that it serves as a *standard of deferred payments.* Lending and borrowing are common features in every business community. Debts are contracted for a period of time which may be short or long. There must be a unit for calculating these debts. By providing

such a unit money greatly facilitates borrowing and lending. It is thus one of the factors which have built up the vast economic organization of modern times.

(d) Store of value.

A fourth function of money is that it serves as a *store of value*. Gold and silver, which are selected as money materials, are less perishable than any other commodity in the world. Wheat or any other product which will command a value cannot be stored for a long period. Money obviates this difficulty. One can store purchasing power for a long time by keeping it in the form of money. Thus it would seem that value can be stored by hoarding money. We generally hold money in reserve against future payments.

Modern economists are laying stress on another aspect of money, its *liquidity*. Since by definition, money is the most generally acceptable commodity, it is also the most liquid of all resources. Possession of money will enable one to get hold of almost any commodity in any place and money never lacks a buyer. People may refuse to accept other commodities ; but they will seldom refuse to accept money, or to sell goods against money. Hence money is the most liquid of all resources. It is this peculiarity which distinguishes money from all other commodities. A preference for liquidity is a preference for money. The Keynesian theory of interest is built up round this peculiarity of money.

Qualities of good money : If we study the history of money, we shall find that all sorts of commodities like tobacco, tea, cow, cowris have been used as money at one time or another. But in course of time all other commodities were discarded in favour of gold and silver. Now what are the special qualities of gold and silver which have led almost all countries to use them as money? The main reason is that these two metals satisfy all the qualities of good money.

The first and foremost quality of good money is *portability or ease of transport*. The material must contain high value in small bulk, so that the cost of transport from place to place may not be prohibitive. Silver, and more

particularly gold, fulfils this requirement in a pre-eminent degree.

The second quality of good money is its *general acceptability*. Apart from its use as money, it must have other uses which it will be highly demanded and will be readily acceptable. Gold and silver, apart from their monetary uses, have considerable demand for use in arts and for making ornaments.

The third quality of good money is *durability*. It must be highly durable and must not deteriorate by wear and tear ; otherwise the stability of the value of money cannot be maintained.

Fourthly, a good money material must be *homogeneous and divisible*. All coins must be made of the same fineness, so that there will be nothing to choose between one coin and another of the same weight. The material must also be capable of division without having any value, so that the value of coins may be fixed according to their relative weights. Further, such materials should be easily malleable, so that they might be stamped with intricate designs.

Fifthly, such money materials must possess the characteristics of cognizability, *i.e.*, they must be easily recognisable and distinguishable from other materials. They must be known either by sight or by sound or the touch, otherwise counterfeiting will be rampant.

Lastly, money materials should have a stable value over a considerable period of time. As money is the standard by which we measure the values of other commodities, it is highly desirable that the standard itself should be the same for long periods.

Classification of money : The first classification of money is that between *actual money* and *unit of account*. *Actual money* is that by delivery of which all payments are actually made and in the shape of which a store of general purchasing power is held. Pound, shilling, pence, or the rupee coins or notes of our country are actual money. *Money of account* is that in terms of which debts, prices and general purchasing power are expressed. Money of account is the *description or title* and actual money means the *thing* which answers to

this description.' The description may remain the same *i.e.*, theoretically the unit of money may remain the same while the actual money answering that description might have been changed. The unit of account in our country is the rupee. But the actual rupee has varied in weight. Previous to 1941, it contained 160 grains of silver. But now it is primarily a nickel coin and one rupee note. Without 'money of account', money proper cannot exist in the full sense of the term. All debts and contracts are expressed in terms of the money of account, while payments are made in actual money.

Actual money or money proper is further subdivided into *commodity money or full-bodied money* and *representative money.* Commodity money is that money which is composed of money metals, the intrinsic value of the coin being equal to its face value. Commodity money is both a medium of exchange and a store of value. But there are other kinds of money, which circulate freely as a medium of exchange, but which are not stores of value They represent stores of value, *i.e.*, they are covertible into commodity money which are themselves stores of value. These kinds of money are best known as *representative money.* Notes exemplify representative money. Representative money may be issued either by governments in the shape of notes, or it may be issued by banks in the shape of bank-notes.

Representative money is further divisible into *convertible money* and *inconvertible money, Convertible* money is actually convertible into coins on demand at a fixed rate; while inconvertible money is not actually so redeemable.

Another way of classification is *between 'legal tender money, optional money and subsidiary money.*

Legal tender money is that money by means of which any payment can be made in law and the payee is bound to accept it. It may be made unlimited legal tender or a limited legal tender. Any money which is legal tender up to an unlimited amount is unlimited legal tender, while some money may be made legal tender up to a fixed maximum amount. A rupee is unlimited legal tender. The pound in England is unlimited legal tender, whereas shillings are legal tender only upto £2.

Optional money consists of that vast amount of monetary circulation which, while not legal tender, is generally accepted in the discharge of debts and in other payments *e.g.*, bank notes, cheques, etc.

Subsidiary money is that money which is used for purposes of small change. Eight anna pieces, four anna pieces, two anna pieces, one anna pieces, pice, pies are subsidiary money. These coins are made in small denominations for purposes of small change. They are also made of inferior metal, *e.g.*, nickel, bronze, etc. They are generally limited legal tender, and are issued only by the government in limited amounts.

Another way of classifying money proper is to divide it into *standard money* and *token money*. The *standard money* embodies or represents the money of account. It is the unit by means of which values of all other media of exchange are measured. It is a coin made of the standard metal, gold or silver, and its face value is more than its intrinsic value. It is also unlimited legal tender. *Token money* is money whose face value is more than its intrinsic value. It is characterised by shortness in weight: it is worth less as a mere piece of metal than as money. It is generally issued only by the government and in limited amounts to keep up its value. It is also usually a limited legal tender.

Coins and coinage : When precious metals came to be used as money they were used as rough ingots, and were weighed each time when an exchange was effected. But this system was obviously disadvantageous. With the advent of the system of coining, coins became homogeneous in fineness and weight and the former disadvantages disappeared. Under the modern system of coinage the edges of coins are milled to prevent abrasion and intricate designs are used to prevent counterfeiting.

Coinage was generally free and gratuitous in every state having a standard money ;—free because any person could have any amount of the money metal converted in the coins and gratuitous because no charge was made for the mintage.

If a charge is made for covering the cost of converting bullion into coin, the charge is known as *mintage* or *brassage*. If the charge is higher than the actual cost, then the charge

is known as *seigniorage*. The seigniorage may be taken in two ways:—(*a*) a certain proportion of alloy may be inserted in coins in place of the precious metal, or (*b*) a charge higher than actual costs of minting may be made.

The *mint price of gold* in any country is the rate at which a gold coin is given by the mint in exchange for gold bullion. In England the Mint in pre-war days used to accept gold for coinage at the rate of £3 17*s.* 10½*d.* per ounce, eleven-twelfths fine. As minting was free and gratuitous, the mint price could not differ much from the market price of gold.

Gresham's law : During the reign of Queen Elizabeth an effort was made to reform the system of coinage of England. The Tudor kings before her had put forth a large number of debased coins into circulation. Elizabeth tried to oust these from circulation by issuing new coins. But new coins went out of circulation as fast as they were issued. Perplexed, the Queen sought the advice of Sir Thomas Gresham who gave an explanation of this phenomenon. Hence the statement is known as Gresham's law. It should be noted that the law was formulated more than once before Gresham, so it is difficult to understand why it should be named after him. It was McLeod who first christened the law as Gresham's law.

The law states that "bad money tends to drive good money out of circulation, when both of them are full legal tender". Now "bad" money does not mean counterfeit, debased or clipped coins. *It refers to those moneys which are inferior or cheaper in substance value.* Hence the law may be stated in another way. "Moneys which are inferior in respect to exchange or substance value commonly show greater tenacity in circulation than those which are superior in these respects."[1] For example, when only gold or silver coins are in circulation, old worn out, and light weight coins are bad money; when metallic coins and paper money are in circulation, paper money, being cheaper in substance value, is bad money. The question then arises, how does good money go out of circulation? When both good and

[1] Taylor—*Principles of Economics*, p. 407.

bad money are circulating side by side, people will generally *melt* good coins and so only bad coins will be left in circulation. If a jeweller wishes to melt a good coin for making ornaments, he will generally choose a new coin of full weight, rather than one weighing less. The same is also true of the exchange dealer who wants to ship gold to pay the foreigners. Gold coins of one country are not legal tender in another. Hence gold coins must be melted into bullion and sold as such in the foreign country. Since foreigners will accept gold coins by weight only, coins of full weight will be shipped. Thus good money will disappear through *payments to foreigners*. Lastly, when people want to *hoard money*, they will naturally prefer to keep good coins in hoard.

The chief cause of this is the fact that the superiority or cheapness of different kinds of money is of little importance in actual exchange transactions. Coins which are slightly short in weight generally have no difficulty in passing in trade. Only those people who are extremely careful will notice that they are short; and in the hurry of business, very few people have time to notice it. Even if one notices it, he does not hesitate to accept it, because he knows that he will not have much difficulty in passing it on to someone else. Often businessmen cannot refuse to take such coins for fear of displeasing their customers. Hence in active circulation, bad money serves as well as good money. But in other uses, the quality of coins is of some importance. For example, the jeweller must melt only the very best coins.

In order to avoid the operation of this law modern governments constantly withdraw from circulation old and light coins and replace them by new ones.

Gresham's law and bimetallism.

This law may be in operation not only when coins are of the same metal, but it may be found to operate under other circumstances as well. Under a bimetallic standard when gold and silver coins are freely minted and are unlimited legal tender, the over-valued metal (over-valued at the legal ratio) tends to drive the under-valued metal out of circulation. Thus when the market ratio of gold and silver differs from the mint ratio,

one or the other metal is driven out of circulation. A similar phenomenon was witnessed in India during the pre-war days. Both sovereigns and token rupees were unlimited legal tender. But all sovereigns put into circulation immediately disappeared. The government concluded that India did not want gold coins. But the true reason for the disappearance of gold was the operation of the Gresham's law. Rupee was a token coin and naturally people would like to make payment in token coins and hoard gold. Gresham's law may also come into operation when there is a considerable circulation of paper currency side by side with metallic money. If, by over-issue or for any other reason, the paper currency becomes depreciated, the metallic money goes out of circulation altogether. During the war and the post-war days many countries had to issue inconvertible paper money and the metallic money wholly went out of circulation. Thus the law may be found to operate under various circumstances.

Limitations of the law.

The law will fail to operate under the following circumstances. First, it will fail to operate if the total circulation of money including both good money and bad money falls short of the actual monetary needs of the community. Secondly, it will fail to operate if the community as a whole refuses to accept and circulate bad money. In these cases, good money will remain in circulation.

CHAPTER XXIX

MEASURING THE VALUE OF MONEY

Index-numbers : The value of everything is measured in terms of money. But the value of money cannot be measured in terms of money. The latter is usually wanted for the purpose of buying goods and services. Therefore the value or the purchasing power of money can be determined by averaging the prices of a number of selected commodities on which people spend their income. The average of the prices of commodities and services on which money is spent for various purposes is called the *price-level ;* and a series of price-levels is called the *Index-numbers.* Index-numbers are, therefore, figures of price-levels constructed for showing changes in the prices of goods and services in which we are interested. They are a kind of statistical average of prices of different commodities and services for the purpose of showing fluctuations in the value of money. When the price-level rises, that means a given amount of money buys less commodities ; the value of money has fallen. Similarly, when the price-level falls, the value of money rises. The value or the purchasing power of money, therefore, varies inversely with the price-level.

When we study the prices of particular goods over a period, we find that some of them may be rising, while others may be falling. Moreover, those which are rising or falling, are moving upwards or downwards at different rates. But throughout all these conflicting movements, there is a central tendency of the whole group. When this central tendency is rising, prices of most commodities will be rising too, though some may be falling at the same time. It is the purpose of the index-numbers to point out this central tendency.

The main facts about the construction of index-numbers are the following:—(*a*) we must take a base period, and prices of other periods are to be compared with those of the base period. Then we must select the number of

commodities, their prices at different periods, and then calculate the averages of prices. To take a concrete example.

Rice	per maund	Rs.	6 = 100	Rs.	8 = 133⅓
Pulses	,,	,,	5½ = 100	,,	11 = 200
Sugar	,,	,,	6 = 100	,,	9 = 150
Flour	,,	,,	5 = 100	,,	7 = 140
Tea	per pound	,,	1 = 100	,,	1⅜ = 137½
Average = 500 ÷ 5 = 100					760 5/6 ÷ 5 = 152 1/6

Therefore if the average price of five articles was represented by 100 in 1939 (the base year), the price-level of the same goods in 1940 has risen to 152 1/6, *i.e.*, by 52-1/6 per cent.

Weighting an Index-number.

But index-numbers, constructed according to this method, do not show a correct picture of changes in the value of money. It ascribes equal importance to every commodity. The result is often misleading. The price of rice may rise in any year by 50 per cent. and that of tobacco may fall 50 per cent. The average remains the same, and the index-number does not change. But the rise in the price of rice will affect the people in a greater degree than the benefit accruing from the fall in the price of tobacco. To give better results, the different commodities should be given due weight in accordance with their importance in national consumption. If the importance of rice is four times that of tobacco, the price of rice should be multiplied by four while that of tobacco by one. To take a numerical illustration, represent the prices of rice and tobacco by 100 in 1939. The average is 100. Next year the price of rice rises by 50 per cent., while that of tobacco falls by 50 per cent. Then in 1940, the price of rice is 150, that of tobacco is 50. The average is still 100. The unweighted index will show no change. If rice is 4 times more important than tobacco, its price should be multiplied by 4. In 1940 the price of rice will be 150 × 4, or 600 ; and that of tobacco is 50. The average is 130. This index number will, therefore, show that the value of money has fallen. This is more accurate as a 50 per cent. rise in the price of rice affects people more

than the similar fall in the price of tobacco. The weight to be attached to different goods is to be determined, by reference to the relative amounts of their income which people spend on them.

Devised in this way, index-numbers have been used in all countries to measure changes in the average price-level.

Difficulties in the construction of index-numbers.

But there are certain practical difficulties with regard to the construction of index-numbers. The first difficulty is with regard to the choice of the base period. Care should be taken to select the base period, which should be as normal as is possible. The question of prices to be averaged raises another problem. Most index-numbers are based on wholesale prices as it is comparatively easy to collect figures of such prices. But ordinary consumers buy goods at retail prices. Hence if our index-numbers are to show changes in the purchasing power of money, they should be based on retail prices, not on wholesale prices. But it is not always easy to get correct statistics of retail prices. In recent times, however, attempts are being made to devise index-numbers based on retail prices, *e.g.*, cost of living index-numbers. There are also certain difficulties in connection with weighting. It is not an easy task to determine the weight or the importance of an article in national consumption. The cost of food materials assumes greater importance in working class budgets than in those of rich persons. The weight to be given to automobiles in America will be different from that in India. Moreover, the importance of any article in national consumption may decline or increase over a given period on account of the relative rise or fall in the prices of different articles. Hence the weights will have to be revised constantly, which is a source of difficulty.

The proper selection of commodities is also a perplexing problem. It is necessary to select a number of commodities which should fairly represent the purchasing power of money to a class of people. Different classes of people are interested in different kinds of goods. Changes in the prices of petrol and cars will materially affect the purchasing power of money to the rich while they will not mean anything to the poor. Even within the same class it seldom happens that

two people spend their incomes on the same commodities and in the same proportion. A change in the prices of fish and meat will not affect the value of money to a vegetarian and a non-vegetarian in the same way, though both may belong to the same class of people. Strictly speaking, we ought to construct a separate index-number of the cost of living for every person or family; on account of differences in customs, tastes, size of the family, etc., different families within the same group are found to spend their incomes on different bundles of goods. Moreover, even if commodities are selected correctly there is no guarantee that they will remain the same in quality over a period of time. "A bus ride during which you sit down is not the same thing as a bus ride during which you have to keep on giving up your seat," though on each occasion you pay the same fare. A Ford car of 1920 may be sold at the same price as another Ford car of 1935. Looking to price alone, the value of money has not changed. But if the second car contains many improvements, not thought of in 1920, one would certainly be getting better value for one's money in 1935 than would be shown by the index-number.

Another difficulty is introduced by the fact that people may buy different goods at subsequent periods. New commodities may be introduced between the two periods; some old articles may have dropped out of consumption. A generation which did not know tea may be supplanted by a generation which must have its morning cup of tea. A family which did not consume anything except ghee might now be forced to take only vegetable ghee. Hence index-numbers based on the averages of prices of goods consumed in the first period will not provide a correct indication of changes in the value of money in the second period. To meet this difficulty, Marshall suggested the method of "chain index numbers". "On this method, the price-level of 1900 is compared with that of 1901 on the basis of commodities available in both years, new commodities introduced during 1901 being ignored; the price-level is then compared with that of 1902, new commodities of 1901, this time being counted, but those of 1902 ignored and so on." But this method does not solve our difficulties; it only enables us

to avoid them. We cannot, for example, know to what extent we are better off or worse off as a result of the dropping out of a commodity, or the use of a new one. It is also not of much use in comparing changes in the value of money over long periods.

Hence index-numbers can at best provide approximate indications of changes in the value of money. Difficulties in its construction become of less significance when periods between which comparisons are being made are separated by short intervals; they become insuperable when long periods of time elapse. As habits are relatively fixed, the bundle of commodities on which we usually spend our incomes (especially the principal commodities) changes very little from year to year. Significant changes in the qualities of commodities, or the introduction of entirely new articles are hardly rapid enough to influence the cost of living, if the two periods under comparison are not separated by a large interval of time. As a result, measurement of changes in the purchasing power of money over short periods can be approximately done by means of index-numbers.

Purposes and kinds of Index-numbers : The purpose for which an index-number is constructed is essential to its proper construction. The selection of commodities, weights to be allowed to different articles are all dependent on the purpose for which we want the index-number. For example, an index-number, designed with a view to measuring the purchasing power of money, will not be the same as that used to measure the cost of living. Therefore we must also consider the different purposes and kinds of index-number.

Different types of Index-numbers.

An index-number may be required to measure the general purchasing power of money. It should include all items that are finally consumed. Such a comprehensive index-number has not yet been attempted owing to the difficulties and complexities of the task. However, Mr. Carl Snyder's "the index of the general price-levels", constructed by "combining four types of price-levels", *viz.*, wholesale prices, wages, cost of living and rent, is somewhat more comprehensive. *Secondly,* index-numbers might be constructed to

measure changes in the cost of living of the working class. Wages in some industries are adjusted on a sliding scale to correspond with such changes in the cost of living. For this purpose, cost-of-living index-numbers are prepared in many countries. *Thirdly,* we may have an Earnings Standard computing money-wages per hour of all workers. *Fourthly,* we may have a Wholesale Standard, composed like Sauerbeck's and the Economist's of the prices of raw materials, foodstuffs and semi-manufactured goods. *Lastly,* when the purpose is the stabilisation of the price-level, a Tabular Standard composed of the wholesale prices of important commodities may be constructed.

CHAPTER XXX

THE QUANTITY THEORY AND THE VALUE OF MONEY

What causes change in the value of money? How is it that general prices rise all round during certain periods, while they fall during some other period? Several centuries ago, writers pointed out the close connection existing between changes in general prices and changes in the quantity of money. The idea gained ground, and came later to be known as the Quantity Theory of Money.

The theory states that the general level of prices depends mainly upon the total quantity of money in the country. Supposing that the government of the country suddenly becomes generous and grants Rs. 50/- to each citizen. People, having now more money to spend, will proceed to spend the money in buying goods and services. But the volume of goods and services will not change on account of this increase in the quantity of money. When more money is spent on the same volume of goods and services, their prices are bound to rise. The more money is spent, the more will prices rise.

To prove that changes in the value of money depend upon changes in the quantity of money, the quantity theorists proceeded in the following way. The value of money, like the value of any other commodity, is determined by the demand for and supply of money. Money is the medium of exchange and is demanded whenever there is some exchange to be made. The demand for money comes from the volume of goods offered for sale. The latter, in its turn, depends during a given period on the aggregate volume of production. The aggregate volume of production is determined by such factors as the supply and efficiency of the factors of production, the organization of production etc., and not on the value of money. Thus during a given period, when the quantity of money changes, the aggregate volume of production will remain the same, and so the volume of goods offered for sale will also remain constant. In other words,

the demand for money remains constant during a given period when the quantity of money changes, but no other change takes place in the meantime. As the demand for money remains constant, the value of money will be determined by the supply *i.e.*, the quantity of money. A doubling of the quantity of money in circulation would result in a doubling of the price-level.

What determines the supply of money during a given period? It is equal to the total quantity of money which is used to purchase the goods offered for sale. It is different from the total amount of coins, paper currency notes and bank deposits. Each piece of money may be used several times in course of a given period to purchase goods and services. Each time a coin or a paper currency note changes hands for buying goods, it adds to the supply of money. If one rupee is used three times in course of the week for buying goods, the total supply of money is equal to three times one rupee, *i.e.*, three rupees. The average number of times a unit of money changes hands for buying goods during a given period is known as the velocity of circulation of money. The supply of money is, therefore, equal to the total amount of money multiplied by their average velocity of circulation. Changes in the supply of money will cause proportionate changes in the price-level.

Mill's and Fisher's presentation.

This is the famous quantity theory of money. The theory in its original form stated that the amount of goods to be sold remaining constant, *i.e.*, the demand for money remaining the same, the price-level varies directly with the quantity of money in circulation. Money meant only coins and paper notes. Account was also taken of the velocity of circulation of money, *i.e.*, the number of times each coin changed hands during a given period. To put it algebrically, the price-level P. could be found by dividing the quantity of money M., and its velocity of circulation V, by the volume of trade T. P. was, therefore, equal to

$$\frac{MV}{T}$$

But soon it was found that in a developed community, some credit was also used to purchase goods. The theory was

then modified to include the volume of deposits and its velocity of circulation. The theory was put into an algebrical form by Fisher.[1]

$$P = \frac{MV + M'V'}{T}$$

P is the price-level. M means money in circulation, including coins and paper notes, and excluding bank reserves and other hoards of money. V is the velocity of circulation of money ; M' is the volume of bank-deposits withdrawable by cheques and V' is the velocity of circulation of bank-deposits, determined by dividing the total volume of deposits withdrawable by cheques by the total amount of cheque payments during a given period. T denotes the volume of trade in goods and services of all kinds sold against money. According to Fisher during normal periods, the three elements in the equation, T, V and V', will remain constant when the quantity of money changes. T, the volume of transactions, depends on the total volume of output produced in the country. The latter, in its turn, is determined by the supply and efficiency of factors of production etc. These things do not change because the quantity of money changes. T, therefore, remains constant during a period when M changes. Similarly, velocity of circulation depends on the habits of the people and on the methods of doing business. Hence V and V' tend to remain constant during a given period.

There are two fundamental points in this equation. *First,* P, the price-level, changes because the quantity of money changes and not otherwise. *Secondly,* the price-level changes exactly in the same proportion as the quantity of money. According to Fisher, the volume of deposit money is related in a more or less constant proportion with the quantity of cash reserves. As deposits can at any time be converted into cash, the creation of deposits by banks depends on the reserve of cash possessed by them. The proportion of reserves of cash to deposits is more or less constant. M' bears a constant relation to M, the quantity

[1] Fisher. *The Purchasing Power of Money,* pp. 142-155.

of lawful money. We have already seen that at any given time, V and T are more or less constant. Hence changes in M will cause direct and proportional changes in the price-level. Fisher does not deny that changes in the quantity of money may cause a change in the velocity of circulation of money, or in the volume of transactions. But such conditions are abnormal or transitional. In the long run, under normal conditions, changes in the quantity of money will cause exactly proportionate changes in the price-level.

Criticism.

Criticism : One of the main criticisms that have been levelled against the theory is that it assumes that other things are constant. But other things do not remain constant. The fact that other things *may* change is, however, no ground for rejecting the theory. All scientific theories are based on the assumption that other things remain equal. The quantity theory can be objected to if we can show that other things *must* change if either the quantity of money, or the price-level (the two variable factors in the equation) changes. It is necessary, therefore, to see whether this actually happens. In Fisher's equation, the velocity of circulation of money and the volume of transactions are assumed to be independent of changes in the quantity of money and in the price-level. But in real life, neither V, nor T is independent of M or P. The velocity of circulation of money is closely related to changes in the price-level, increasing during periods of great business activity and rising prices, and decreasing during depressions and falling prices. Moreover, V is also affected by changes in the quantity of money. The volume of transactions T is also influenced by changes in the price-level. Recent studies on business cycles have conclusively shown that changes in prices are an important influence in determining the volume of production. The quantity of money is also not independent of other factors in the equation. It is influenced, to some extent, by changes in the volume of transactions and in the price-level. Fisher's assumption that M′ bears a constant relation to M is also not borne out by facts. The relationship between M and M′ is not constant. Fisher, of course, recognises all these facts.

His reply is that these variations in other factors occur during short, transitional periods. In the long run, they remain more or less constant. But as Keynes has pointed out, in the long run, we may all be dead. The usefulness of a monetary theory which disregards business cycles can easily be imagined.

Secondly, it has been argued that the effect of a change in the quantity of money is not simply a proportionate change in the price-level as is stated in Fisher's equation. Only under exceptional circumstances, a doubling of the quantity of money will double the price-level. The usual effect of a change in the quantity of money is a "complex series of reactions touching prices, production, and the desire of the community to hold command over real resources." So long as there are unemployed resources, an increase in the supply of money will cause these resources to be drawn into production, and prices may not rise at all. So the proportionate relationship between changes in the quantity of money and in the price-level does not always exist.

Thirdly, the theory is also inadequate to explain the processes through which changes in the quantity of money affect the price-level. It does not help us to separate out those factors through which the price-level is determined. "The fundamental problem of monetary theory is not merely to establish identities or *statistical equations relating the turnover of monetary instruments* to the turnover of thing traded for money. The real task of such a theory is to treat the problem dynamically".[2] Changes in the quantity of money do not exercise any *direct* influence on prices. They first affect the rate of interest, and the prices and the output are influenced *via* the rate of interest.

It does not measure the purchasing power of money.

The most fundamental objection is that Fisher's equation does not measure the purchasing power of money. It determines the average value of monetary transactions of all kinds. The major portion of transactions included in T relates to industrial, commercial and financial transactions. Whereas by the purchasing power of money, we

[2] Keynes. *A Treatise on Money.* Volume I, p. 133.

refer to transactions relating to the purchase of goods and services for consumption. And the latter type of transactions forms only a small part of the total transactions included in Fisher's equation. Hence the equation measures not the purchasing power of money, but the *Cash-Transactions standard.*

Cambridge equation : The theory has been presented in another form by a group of writers. According to them, the demand for money does not depend on the volume of goods to be sold for money, "but by the ability and willingness of persons to hold currency, in the same way as we think of the demand for houses as coming not from persons, who buy and re-sale or lease and sub-lease houses, but from persons who occupy houses." An individual wants to hold a certain proportion of his income, either in cash or in bank deposits, in order to meet his personal expenditure and to provide for contingencies. Similarly, the merchant and the industrialist want to keep a certain amount of money on hand for purposes of business expenditure. The total amount held in these ways constitutes the demand for money. The supply of money is the quantity of coins, paper currency notes and bank deposits, not the amount that is actually circulating. The idea was, however, not new. Marshall has shown that this conception of the demand for money can be found in the writings of Petty, Locke and Cantillon.

In his *Tract on Monetary Reform* published in 1923. Keynes[3] gave a formula based on this conception. He started from the concept that people require to hold a certain amount of purchasing power in order to buy a number of what he called 'consumption units', "made up of a collection of consumption or other objects of expenditure." Suppose k is the number of consumption units which the public find it convenient to hold in cash ; and k' the number of such units which the public hold in bank-deposits. So pk' is the total bank-deposits withdrawable by cheques. Let r be the proportion of cash reserves held by banks against their deposits ; n be the total quantity of

[3] See *Tract on Monetary Reform*, pp. 84-88.

currency in circulation and p the price per consumption unit. Therefore

$$n = p \ (k + rk') \text{ or } p = \frac{n}{k + rk'}$$

The great merit of this line of approach is that it does away with the somewhat crude conception of the demand for money as coming from the volume of goods. Instead of focussing attention on the almost mechanical concept of the velocity of circulation, it brings out the fact that the price-level depends on the people's habits about holding a proportion of their incomes in the form of readily available purchasing power. They thus clearly illustrate the parts played in the determination of prices by the decisions of the bankers regarding the amounts of their reserves, and the decisions of depositors regarding the proportion of their incomes to be kept in the forms of either cash or bank-deposits. But the great defect of these lines of approach is that magnitudes of both k and k′ of Keynes' equation are not definitely determinable by statistics.

The relation between Fisher and Cambridge equations : It should be noted that the differences between the Fisherine type of equation and the Cambridge equation is not as fundamental as is generally supposed. The two types of equation represent different views of the same thing from different standpoints. The Cambridge equation focusses attention on the amount of money held in the balances of individuals at any given time (*i.e.*, "Money sitting" in Robertson's language) with a view to finance their future transactions ; Fisher's equation is concerned with the amount of money required by the community during a *period* of time (*i.e.*, "money on the wing" according to Robertson) to finance its transactions. The first refers to *a point* of time, the other refers to *a period* of time.

The quantity of money and the Trade cycle: The most fundamental criticism of quantity theories lies in the fact that they are inadequate to explain those changes in price-level which occur during a trade cycle. According to the theory, all changes in price-level are due to changes in

the quantity of money, and the remedy for a period of falling prices is, therefore, to increase the quantity of money. But after 1929, when prices began to fall rapidly all over the world, almost all governments tried to stop the rot by injecting more money into circulation. But in spite of vast increases in the quantity of money, prices continued their downward course. An increase of money failed to cause a rise in prices.

Secondly, when the boom ends and recession begins this is not always due to any shortage in the supply of money. The rise in prices may be checked long before there is any dearth of purchasing power in the country. Periods of depression and falling prices are generally characterized by the existence of surplus purchasing power, and piled up bank deposits. But in spite of that periods of falling prices still continued. The end of a depression and the beginning of a recovery cannot be claimed to be due to causes working on the side of the money. Lastly, it cannot always be said that the quantity of money always determines the price-level. On the other hand the demand for money itself depends upon the height of the price-level and its tendencies to change. Changes in the price-level and in the volume of money in circulation are both simultaneously determined by other factors. A satisfactory analysis of these factors cannot be made on the basis of the quantity theory.

Factors governing short-period changes in prices : What are these other factors? Modern economists now try to explain price changes by reference to the relation between the volume of Saving and Investment. Saving means the excess of money incomes earned during a given period over the expenditure on consumer's goods. An individual receives a certain money income during a given period. He may spend the whole of it in buying consumer's goods, or he may spend a part for this purpose, and save the rest. The sum of money incomes thus saved by the members of a community constitutes the aggregate volume of saving. When a community decides to save a larger portion of their money incomes than before, their expenditure on consumer's goods declines. Let us

Effects of Savings.

assume that total money incomes amount to Rs. 1,000 crores, out of which people used to save Rs. 200 crores and spend Rs. 800 crores in buying consumer's goods. Now, if the propensity to save increases in the community, they begin to save Rs. 300 crores. That is, they now spend Rs. 700 crores (instead of Rs. 800 crores) on consumer's goods. Since nothing has happened as yet to change the volume of such goods, their prices must fall. P, the price-level of consumer's goods, is therefore, determined by the equation E—S = P, where E denotes the total money income, and S, the volume of saving. Here we should note one thing. When an individual decides to save a larger portion of his money income, his savings may increase. But the aggregate volume of savings will not increase in any way. When the individual saves, his action reduces the incomes of somebody, probably sellers of some goods or services. One man's expenditure is another man's income. When a man spends money in buying goods, the incomes of sellers of goods are thereby increased. The wages that he pays to his servant or cook constitute his expenditure, but their income. So when one man or a group of men spend less than before, the incomes of some other people are thereby reduced. These people will then be forced to save less. A man will certainly save less when his money income is (say) Rs. 200 than when it was Rs. 400.

The larger saving of the first group of men will, therefore, be balanced by the smaller savings of the second group. The aggregate volume of savings will not increase in the community. The individual who saves more will, of course, add to his money balances. His action will cause, not an increase in the aggregate volume of saving, but a reduction in the incomes of other people, and a fall in the prices of consumer's goods. So an increase or decrease in the propensity to save will simply cause a reduction in money incomes and a change in prices.

Effects of Investment.

Let us look to the other side. In ordinary language, investment means the purchase of a government security, or shares or real estates. But we shall use it in a special sense. Investment means the addition to all kinds of the physical stock

of capital goods. When an individual buys shares in an existing concern, he may be investing in the ordinary language. But as his purchase does not add to the material stock of capital goods, his action will not be regarded as investment. But if he buys shares floated by the concern to carry out extensions of plants, the volume of investment will increase as a result of his action. What happens when the volume of investment increases in a country? Let us assume that there already exists in the country a certain volume of unemployed resources (not a very unrealistic assumption). When businessmen decide to make more capital goods, they will begin to employ these unemployed factors of production. The money incomes of these newly employed people will increase. The expenditure on consumer's goods will increase as these men spend their incomes. This may or may not cause a rise in prices. So long as unemployed resources are drawn into production, the volume of output will increase at the same time and prices may not rise. But usually some rise in prices will take place as it may not be easy to expand the production of all types of goods simultaneously. Once the stage of full employment is reached any subsequent increase in investment will cause a rise in prices. The rise in prices is thus the result of an increase in investment. The opposite will happen if the volume of investment decreases. Unemployment will increase; money incomes will shrink; expenditure on consumer's goods decreases. This will cause a further fall in investment as producers of consumer's goods send less orders for machines, tools and other capital goods which are used to make consumer's goods. A vicious circle thus sets in. Employment and money incomes show a further decline. Prices begin a downward trend.

Prices are, therefore, governed by the propensity to save and the volume of investment during a given period. But the former is generally a stable factor, and remains more or less constant, depending as it does on the habits of the people. So the most important factor determining the price-level is the volume of investment. It affects prices through its influence on employment and money incomes.

It should be noted that this does not mean that changes in prices are caused by an excess or deficiency of saving over investment. The aggregate volume of saving will always be equal to the volume of investment. There is no escape from this conclusion. Let E denote the total money income, which is derived from the production of consumer's goods and capital goods. That is, E is equal to C (income from consumer's goods) + I (income from producer's goods). C, the income from consumer's goods must be equal to the expenditure on such goods incurred by the people. The latter is equal to E—S, where S denotes the volume of saving.

Actual savings and investment are always equal.

Now	$E = C + I$
or	$E - C = I$
Since	$C = E - S$
So	$E - (E - S) = I$
or,	$S = I$

In other words, savings must be equal to investment. This may appear paradoxical. As a man saves, there is no guarantee that investment will also increase in the same ratio. Hence the plain man concludes that savings and investment may not be equal. But that is not the case. Assuming that a group of individuals save more than before, they buy less consumer's goods than before. The sellers of these goods pile up unsold stocks of goods. In other words, their investment in stocks increases by the same amount as the volume of saving. Moreover as we have stated before, such increase in savings by a group will cause a fall in the sales of consumer's goods, a fall in money incomes of producers of these goods, and so a fall in savings. Increased savings of the first group will be balanced by decreased savings of the producers of consumer's goods. So aggregate savings may not increase. When the volume of investment increases employment will increase; money incomes will rise. Given the same propensity to save as before, the volume of savings will also increase. So savings will always be equal to investment.

But this does not mean that the amount people *intended* to save will always be equal to investment ; or the amount that businessmen *intended* to invest will be equal to saving. When people save more than before sales of consumer's goods decline, and sellers pile up stocks. The volume of investment in stocks increases, and thus investment remains equal to saving. But sellers did not intend to make this additional investment in stocks. So the increase in investment that took place was clearly unintentional. Similarly, under full employment, if the volume of investment increases, prices will rise. This rise in prices will force consumers to consume less than before. They will, therefore, be forced to save, and the volume of saving will then increase to match the rise in investment. But consumers did not intend to save in this way. The savings that they are forced to make are thus clearly unintentional.

But intended saving or intended investment need not be equal to the other.

CHAPTER XXXI

INFLATION, DEFLATION AND DISINFLATION

Inflation : There is a difference of opinion regarding the exact meaning of the term "inflation". Inflation has sometimes been defined thus, "whenever the supply of money and of bank deposits circulating through cheques, so-called "deposit currency" increases, relatively to the demand for media of exchange, in such a way as to bring about a rise in the general price-level".[1] But how are we to judge the extent of "the demand for media of exchange"? This, as well as the expression, "needs of trade" do not carry us far. Different people have different ideas about the needs of trade. There is only one way by which we can determine whether the supply of money has increased more than the needs of trade or not, *i.e.*, by finding out whether the price-level has risen or not. But all rise in the price may not be inflationary. The rise in prices which occurs when the average level of costs of production increases cannot be regarded as due to inflation. Moreover, as some writers have pointed out, inflation may occur without any rise in prices. When costs are falling, but prices are kept stable (as in the U.S.A. during 1924-29), the country may develop all symptoms of inflation. This state of affairs is regarded by Keynes as "profit-inflation", to distinguish it from "commodity-inflation (meaning a rise in prices).

Inflation: its meaning.

In his recent article on "Types of War Inflation", Prof. Pigou has stated that "inflation exists when money income is expanding more than in proportion to income-earning activity".[2] An increase in the supply of money will stimulate investment by lowering the rate of interest. As investment increases in the country, the volume of employment offered to factors of production tends to increase so long as there are unemployed resources. With the increase

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[1] *Kemmerer on Money*, p. 46.

[2] *Economic Journal*, Dec. 1941, p. 439.

in employment, or income-earning activities, output of goods and services will expand. So the increase in money incomes will be balanced by the increase in the output of goods and services. When the stage of full employment is reached, any further increase in the supply of money, leading to increased money-incomes, will not cause any increase in employment, or income-earning activities or the output of goods. Hence there will occur true inflation as the price-level of output begins to rise.

True inflation thus arises only after the stage of full employment of factors of production is reached. Sometimes it may happen that some of the factors or resources are in short supply with the result that they are fully employed before other factors whose supply is larger become fully employed. In that case the output of those goods and services in whose production it is necessary to employ scarce factors cannot be increased, though the incomes directed towards the purchase of these goods increase considerably. Prices of these goods will, therefore, rise, and this will gradually spread to other prices, especially if these goods form an important part of the economy. On account of the existence of these "bottle-necks", inflation may be found even under conditions when some of the factors of production remain unemployed. This has been called *"partial inflation."*

Financing of a first class war cannot be done without some amount of inflation. A large percentage of total population is drafted into armed forces, and almost all productive resources are drawn into employment. The economy reaches the stage of full employment and so there is a large increase in money incomes. At the same time a large portion of the total production is taken away by the government for military purposes and less goods are thus available for civilian consumption. So inflation is usually found both during and after the war. Such inflation may occur in two ways. First, as money incomes in the hands of the people rise higher in proportion to the available output, this excess of incomes should be collected by the government either in taxes or loans if inflation is to be avoided. If members of the public do not pay in taxes or loans sufficient sums of

money to defray the war expenditure, the government will be forced to create new money to meet the deficit in its budget. This is to be called "deficit-induced inflation."

Secondly, as prices and costs of living rise, wage-earners may succeed in forcing employers to pay higher wage rates, The rise in wages means higher incomes whereas the output of goods cannot be increased. The result will be inflation. This is to be regarded as 'wage-induced inflation.'

Inflation may be of two types, open and suppressed inflation. When high money incomes and the consequent high demand for goods are allowed to become effective, there would take place a sharp rise in prices. This is the stage of "open inflation." Unless price increases could be held down within proper limits, open inflation may develop into what is known as "galloping inflation." This is the stage when the rate of increase in prices becomes very rapid, either because of the large-scale creation of new money by the government, or because of attempts made by wage-earners to push up wage rates to catch the rising spiral of prices. Such galloping or hyper-inflation took place in Germany during the years 1920-23 or in China during the last period of the Kuomintang rule.

Galloping inflation.

For many reasons the government of the country may not like to allow prices to rise to a high level. Hence during the last war governments of almost every country have tried to limit the spending of the money incomes of the public by various means, such as the fixing of maximum prices of goods, rationing of essential goods, control over the flow of investment etc. If, by means of such rigid controls, the public are prevented from spending their money incomes, "the inflation may show itself not in rising prices but in the accumulation of cash, bank balances, and other forms of encashable private wealth in the hands of the people".[3] Such a development has been called "repressed" or "suppressed" inflation.

Suppressed inflation.

[3] J. K. Horsefield—"The Measurement of Inflation" in the *IMF Staff Papers,* Vol. I. No. 1, p. 18.

Deflation : Deflation means that the level of money incomes earned during a given period is falling relatively to the volume of output. It is characterised by falling employment and prices.

Reflation : During the years after 1929 it became fashionable to talk of 'reflation.' This period was characterised by the great depression with a steep fall in prices and output and considerable unemployment. The remedy for such a state of affairs was sought along the attempt to raise prices to bring them in equilibrium with the level of costs. This rise in prices to be brought about in this way to bring prices and costs into equilibrium is known as 'reflation'.

Disinflation : In recent times, the term 'disinflation' has become popular. The war and the post-war period has witnessed a steep rise in prices in every country of the world. It is being increasingly felt that governments should adopt a policy or policies to bring down prices and costs to reasonable levels. This policy is known as disinflation. It is to be distinguished from deflation. A deflation is characterised by a fall in prices ; disinflation also means bringing down prices. But deflation also signifies falling output and increasing unemployment ; whereas disinflation is to be carried out without these undesirable symptoms. A policy of disinflation means that the government should adjust its fiscal and monetary measures in such a way as to bring about an orderly lowering of prices and costs without causing unemployment.

Effects of changes in the price-level :[4] If fluctuations in the value of money affected each individual equally, they would not cause any serious inconvenience. But in practice changes in prices affect different classes differently. Man is affected by fluctuations of prices in his capacity as a wage-earner, entrepreneur, stock-holder, bond-holder, debtor, creditor and taxpayer ; and in each capacity he may be affected in a different way. Moreover, rising or falling prices influence the course of production and the distribution of wealth in different and often adverse ways.

[4] For one of the best discussions on the topic, see Keynes—*A Tract on Monetary Reform*. Chap. I.

Changes in prices and distribution of wealth. In the modern world, almost everybody is either a debtor or a creditor, and in each capacity he is affected differently. During periods of rising prices, debtors gain and creditors lose. When prices rise, money buys less goods. Thus though debtors return the same amount of money, they return less in terms of goods. Conversely, when prices fall debtors lose, and creditors gain, because debtors in returning the same amount of money return more in terms of goods (since money will now buy more). Therefore the investing classes and savers lose during periods of rising prices, and gain when prices fall. Periods of rising prices not only diminish the value of the savings of investors, but destroy the atmosphere of confidence which is a necessary condition of the investor's willingness to save.

Similarly, a man may be either a wage-earner or entrepreneur. It is a familiar fact that during periods of rising prices, wages do not generally rise as high as prices do. Therefore, the purchasing power of wages diminishes during periods of rising prices, and wage-earners are thus hard hit. Conversely, prices fall, wages do not fall so much and wage-earners are, therefore, gainers.

Periods of rising prices are periods of good employment.

But there is another side to this picture. During periods of rising prices, employers make good profit and offer more employment to labour. Therefore during such times, though the purchasing power of wages diminishes, wage-earners as a class get more employment. Conversely, during periods of falling prices, employers undergo losses, cut down output and so offer less employment to workers. As a result, a number of labourers becomes unemployed. Thus though real wages rise, total money-wages may fall as a result of falling employment.

Entrepreneurs, on the other hand, gain during periods of rising prices and lose during periods of falling prices. They gain because of three reasons. *First,* they are mostly debtors, and debtors gain when prices rise. *Secondly,* they buy raw materials and other goods at old and lower prices and sell when prices are generally higher. *Thirdly,* wages and other fixed elements in their costs do not rise as much

as the rise in prices. As a result, they earn surplus profit, increase their productive activities, and offer more employment to others. The converse happens when prices fall. Their profits are turned into losses ; they curtail production, and unemployment ensues. Thus periods of rising prices benefit those with fluctuating incomes like businessmen ; and injure those with more or less fixed incomes like interest-receivers, investors and wage-earners.

Effect of price-changes on production. Fluctuations of prices increase the risks and uncertainties of business operations, and thus hamper the smooth flow of productive activities. An increase of risks means that risk-bearers will exact a big toll from the society in the shape of larger profits. But if prices were stable, risks would also be fewer, and the remuneration for risk-taking will be lower. Moreover, during periods of rising prices, businesses are unnecessarily stimulated. Businessmen earn windfall profits. They invest more in production, and in turning out more producer's goods. Ultimately, the supply of goods coming to the market increases vastly so that they could not be sold at profit. Businessmen then make losses and begin to contract production. Prices fall and unemployment ensues. Thus periods of rising prices stimulate production unduly, while businesses are unduly depressed during periods of falling prices.

Price-changes, Taxation and Public Debt. During periods of rising prices, tax-payers gain, because though they may pay slightly higher taxes they hand over less amount in terms of goods than before. Income-tax payers gain because they pay in rupees whose value has depreciated as compared with the value of the income when earned. The burden of land revenue also decreases, because persons paying it hand over less in terms of goods to the government. Many other inequalities may be cited in the sphere of taxation. Moreover, rising prices decrease the real burden of public debts, both external and internal ; while falling prices increase their burden.

Social consequences of price-changes. So long we have been considering the economic effects. But the social effects are no less serious. Periods of unstable prices are periods of

great social unrest and distress. When prices rise, wage-earners try to increase their wages as their cost of living increases. As a result periods of rising prices are usually accompanied by strikes. When prices fall, employers try to reduce the level of wages and this provides another source of friction, often leading to open conflicts between employers and workers. Unemployment increases and creates much social unrest. Thus rising prices are characterized by strikes ; falling prices by lock-outs.

In conclusion, we may say that both periods of rising or falling prices are harmful. Inflation diminishes the real income of investors and wage-earners, two most important classes in society. It causes an unhealthy growth of productive activities which would soon bring about a crisis. Deflation hurts employers and therefore adversely affects the mainspring of productive activity. It increases unemployment, whose social and economic consequences are disastrous.

Control of inflation : Inflation is due to the fact that the total expenditure is running ahead of the total volume of goods. The only way to control inflation is to limit the amount of total expenditure on goods to the available supply of goods. This can be done in the following way.

Total expenditure consists of five items, *viz.*, (*a*) personal expenditure on consumption, (*b*) private investment, (*c*) government expenditure, (*d*) public investment and (*e*) foreign investment or the balance of international payments. Leaving aside the last item, if the government wants to control inflation, it will have to limit expenditure on the first four items. So far as the government demand for consumption is concerned, there may not be much room for curtailment in normal times, as it is not possible to cut down the expenditure on medical services or education to a considerable extent. This is not to say that there is no possibility of limiting government expenditure. But chances of a serious cut in this item of national expenditure are not very great.

Since personal consumption and investment usually constitute the most important element in total expenditure, the best way is to take steps to control these two items. This can be done in three ways:

Fiscal policy : In times of inflationary pressure the government should raise the rates of both direct and indirect taxation so that individuals will have less money incomes than before. With smaller incomes the demand for goods will fall off. While this is a good solution, it is subject to the danger that too high rates of taxation would discourage capital formation.

Monetary policy : Another method is to use monetary policy either alone or in conjunction with fiscal policy. In other words, the Government would raise the rates of interest to limit both personal expenditure and private investment. Though it was the fashion to deny the influence of the rate of interest on the volume of private investment, its efficacy is being recognised in recent times ; and in a large majority of countries, central banks have raised the rates of interest to control the inflationary pressure. Higher rates of interest cause the prices of securities to fall, and so reduce the willingness of their owners to spend money on consumption. High rates also lead to a decline in private investment. In this way raising the rate of interest may serve to limit the total expenditure on consumption and investment.

But the main difficulty with the use of the monetary policy has been its repercussions on the budgetary position of the government. In every country the interest on the national debt is a large item in the government budget. To raise the rate of interest by a substantial amount to check total expenditure would increase the burden of interest payments. Secondly, frequent changes in the rates of interest would cause considerable fluctuations in security prices. This would create difficulties for the investors.

Blocking liquid assets : During the last war the governments adopted several measures like price control, rationing etc. to prevent the spending of high personal incomes. As a result, consumers accumulated large liquid balances, waiting to spend them on things they could not buy during the war.

The presence of such a large amount of liquid funds, combined with a good deal of unsatisfied demand for various types of goods made it essential to take special measures for controlling this stock of assets. Hence governments of many

European countries have been forced to adopt measures for *blocking these liquid assets.* In countries where there was an excessive note-issue during and after the war, a new currency was introduced in which one new note was given in exchange for a number of old notes. Other notes were either cancelled or paid into some form of blocked account. Bank deposits were also blocked and holders were allowed to withdraw only a part of these deposits as determined by the government. In these ways a large slice of the excess monetary purchasing power was eliminated in such countries as Belgium, France, Denmark, the Netherlands, Norway, Czechoslovakia and Soviet Russia.

Such a policy is likely to prove effective. But it also gives rise to a great many difficulties, and is likely to prove inequitable. There will be some genuine cases where the blocking of notes and deposits would cause a good deal of injustice. The parent who has deprived himself of many things in the past in order to save a certain sum of money for the education of his growing children or for the coming marriage of his daughter will be equally hit by this blocking policy as the black marketeer who is hoarding his ill-gotten money in notes and deposits. How are we to distinguish between the first case where, obviously, some relief should be granted and the second case where more stringent measures should be taken? It is, therefore, a measure which should be adopted only in emergencies.

It should be noted that price control, rationing of essential commodities in short supply etc., do not cure inflation. They only suppress the inflationary pressure, and thus only postpone the evil day. They may, however, be necessary to control the worst effects of inflation.

Control of investment : Lastly, when inflation is on the way, the government should adopt suitable measures for the control of the flow of investment, both public and private. Periods of inflation are not generally the time for the adoption of large-scale measures of public investment. Such investment will only add to the fire of inflation. To control the flow of private investment, the usual method is to raise the rate of interest. But the main defect of such a method of control is that such control is impersonal and does not

distinguish between essential and non-essential investment. High interest rates hit all types of investment, the building of factories for the manufacture of luxury motor cars as also factories for making essential clothes for the poor. Hence such a measure should be supplemented by a system of licensing of investment. Permission to float shares and to buy raw materials is to be given only to essential industries, which would be given top priority, while investment in non-essential directions is to be stopped or seriously curtailed.

Inflation is a hydra-headed monster, and should be fought with many weapons. Reliance on a single method of control may not prove effective.

CHAPTER XXXII

THE MONETARY SYSTEMS

A country may make one or two metals as its standard of value. When one metal, either gold or silver, is adopted as a standard of value, the system is known as *monometallism.* If the standard metal is gold, it is known as gold standard. If the standard is silver, it is called silver standard.

Two metals may be combined in various ways as standards of value. When both gold and silver freely circulate as legal tender at a fixed ratio of exchange with each other, and are freely minted, the system is known as *bimetallism.* When both the metals are full legal tender, but one, generally silver, is not freely minted, the system is known as the *"limping standard"* ; limping because silver not being freely coined, is limping or acting with difficulty. Such a standard was prevalent in France in the 19th century. There is another way of combining the two, if we adopt the suggestion of Marshall. The standard of value would be a fixed quantity of gold combined with a fixed quantity of silver. The government should always be ready to buy this combined bar of gold and silver at a fixed price, but there should be no fixed par of exchange between silver and gold. This system, known as *symmetallism,* was recommended by him as a compromise between gold and bimetallic standards.

Bimetallism : Bimetallism is a monetary standard when there is a free coinage of both gold and silver at a fixed ratio, and when coins of both metals are unlimited legal tender for the payment of debts. In England, bimetallism was finally abandoned in 1816, though throughout the 18th century gold was the actual standard in England. France adopted it in 1803, and in 1865, it was prevalent in the Latin Monetary Union, consisting of France, Belgium, Switzerland and Italy. In the U.S.A., bimetallism was adopted in 1792. After various controversies, it was finally abandoned in 1900.

The following advantages have been claimed for bimetallism. *First,* it was argued that it would secure greater stability of prices than was possible under gold standard. The course of production of both the metals might be more steady than that of the production of one of them. If the output of gold falls, that of silver may rise, and *vice versa.* In this way, an increase or decrease in the production of one metal might be compensated by an opposite movement of the other. The total output of gold and silver may thus be steady, and the price-level would also be stable as in the case of two drunken men, who might walk more steadily if they walked hand in hand. A standard consisting of two metals would, therefore, be more steady. If all countries adopted gold standard, the output of gold would fall short of currency requirements. As a result, we would have a period of falling prices and trade depression. The adoption of bimetallism, by tapping the supply of silver for monetary purposes, would stop this fall in prices. *Thirdly,* the adoption of bimetallism would stop the fall in the price of silver. During the early seventies of the 19th century, and the twenties of this century, the price of silver was falling greatly. Such a fall in the price of silver diminished the purchasing power of the silver-using countries of the East which were, therefore, unable to purchase goods. If silver was remonetised, the demand for silver would increase and so also its price. Such a rise in price would increase the purchasing power of silver-using countries, and would stimulate their demand for goods and might end the depression. *Lastly,* it was argued that the adoption of bimetallism would secure a fixed rate of exchange between gold-using and silver-using countries. The rate of exchange between them is determined by the gold value of silver. If the price of silver fluctuates, the rate of exchange would constantly vary, and this fact would introduce a great deal of uncertainty in the trade between two countries. Under bimetallism, the ratio of exchange between gold and silver would be fixed, and the course of trade between the countries would be smooth.

Advantages of bimetallism.

These arguments are formidable. Regarding the argument about the stability of prices, Taussig's opinion is that

after 1850 bimetallism tended to steady the course of prices. But that it would always do so is not sure. What is the guarantee that when gold output will fall, that of silver will increase? What if the courses of their production move in the same way? The fact is that steadiness of the general level of prices would have to be managed by central banks. But the great defect of a bimetallic standard is that it would be almost impossible to maintain the mint ratio between the two metals in the face of changing market ratios. Suppose at the mint, the ratio is 16 to 1. That is, 16 ounces of silver would be coined into pieces of the same value as one ounce of gold. Suppose further that in the bullion market, 15½ ounces of silver would buy one ounce of gold. Nobody would then take silver to the mint for coinage. Only gold will be presented for coinage; gold is then said to be overvalued, and it will drive silver out of circulation and will become the sole medium of exchange, in accordance with the Gresham's law. Thus as the market price of gold rises or falls, it will go in or out of circulation, and the country will have either gold or silver standard alternately.

Compensatory action of bimetallism.

But there are some compensatory tendencies. Suppose gold is overvalued at the mint, and everybody is presenting it for coinage. The supply of gold as bullion in the market will fall off and the supply of silver as bullion will increase. The result will be that the value of gold will fall and the mint ratio and the market ratio will come closer to each other. Thus there is a tendency under bimetallism for the automatic maintenance of the gold-silver ratio. But if there is a strong tendency towards the continuous increase in the output of one metal, and therefore towards a fall in its value, that metal will drive out the other from circulation.

If several important countries adopt the standard, there is a greater chance of keeping the ratio between the two metals stable. If all countries adopted the same ratio, export of their gold or silver would be checked as no profit could be obtained by such action. Consequently Gresham's law would not be in operation. International bimetallism would thus ensure the simultaneous circulation of both metals at fixed ratio.

Bimetallism, therefore, to be practicable, must be international bimetallism. And therein lies the greatest hindrance to the introduction of bimetallism. Towards the end of the 19th century, two international conferences were convened with a view to the adoption of bimetallism. But both of them failed. "Great Britain at no time was willing to accede .... without Great Britain, Germany would not come in; without at least one of those countries, the United States would not. Whatever the abstract possibilities of united bimetallism, the project never had a working prospect of realization".[1]

It would complicate the working of the monetary standard.

There are also other difficulties of bimetallism. It would introduce great confusion in all business transactions. If one of the metals is undervalued in the market, debtors will want to pay in that metal, while creditors will of course want payment in the overvalued metal. As a result, all transactions will become uncertain and confused. Moreover, though ultimately the mint and market ratios would come together, yet there might be intervals when the two ratios will not be equal. Speculators will then hold the undervalued metal in the hope of profiting from the later rise in its price. Thus there would be constant speculation in the bullion market. The fact is that whether under gold or silver, the monetary standard would have to be managed by central banks so that its value might be stable. We have enough trouble in linking our fate to one metal. It is no use complicating the mechanism and increasing the troubles of management by tying us to two metals.

Gold Standard

The essence of gold standard is that the currency authority should be ready to buy and sell gold at a fixed price in terms of local currency. So long as this is done the value of a local currency cannot deviate from that of gold. Other features of the gold standard were somewhat different in different countries. Moreover, after 1920, the theory and practice of gold standard have undergone changes,—some of

[1] Taussig. *Principles*. Vol. I. 3rd Edition pp. 282-3.

them for the better, and others for the worse. We shall, first of all, discuss the features of gold standard which functioned before 1914.

The pre-1914 gold standard was based on the free coinage of gold. Its normal features were the following:—

Features of the pre-war Gold Standard.

(*a*) The standard money was defined as a fixed weight of gold, and this gold coin circulated as full legal tender. Thus the sovereign contained 123·2744 grains of gold (eleven-twelfth fine); Franc, 497806 grains (nine-tenth fine). All other forms of circulating media, *viz.*, notes, etc., were freely convertible into gold coins. The result was that the total quantity of coins was dependent on the quantity of gold available in the country. (*b*) The currency authority was, by law, required to buy and sell gold at fixed prices for minting into coins. The buying and selling prices may be slightly different. For example, the buying price of one standard ounce of gold in terms of sterling was £3. 17*s*. 9*d*., and the selling price was £3. 17*s*. 10½*d*. The result was that the price of gold bullion could not depart from these figures. (*c*) There was free export and import of gold. The result was a tendency towards equality in the price of gold in all countries. If the price was higher in one country than in another, gold came to be imported into the first country. Prices rose in that country owing to the increase in the supply of gold, while they fell in the second country owing to the export of gold. There was, therefore, a tendency towards an equalization of the prices in different countries through gold movements.

Some important changes were brought about in the mechanism of the gold standard after 1924. First, gold coins were withdrawn from circulation in all countries. Monetary authorities were placed under obligation to convert the local currency, not into gold coins, but into gold bullion. This standard is known as the *gold bullion standard.* It secured a great economy in the use of gold. Secondly, the Central Bank in many countries began to hold part or whole of their reserves against notes and deposits in the form of bills, drafts and deposits in a foreign centre. This type of

Changes in gold standard after the first war.

standard is known as *gold exchange standard,* and it was supposed to secure greater economies in the use of gold than those available under gold bullion standard.

Varieties of gold standard : So there were three varieties of gold standard. The first variety which prevailed before 1914 came later to be known as *gold circulation* or *gold currency standard.* Under this system, gold coins containing fixed weights of gold circulated within the country. All other forms of currency, *viz.,* non-gold metallic coins, paper currency notes, etc., were convertible on demand into gold coins at fixed prices. There was also free coinage in gold, and export and import of gold were completely free.

Gold currency standard.

But after the first world war, this type of gold standard was given up, and a second type was adopted. This variety is known as the *gold bullion standard.* Under it gold coins do not circulate within the country. The actual currency consisted of paper currency notes and token coins, and these were convertible at fixed rates into gold bars containing a fixed weight of gold bullion. In England, bank notes were convertible into gold bars containing 400 oz. of gold at the fixed price of £3. 17*s*. 10*d*. per oz. eleven-twelfth fine. India adopted it in 1927, when the Controller of Currency was under obligation to give, in exchange of rupees, gold bars containing 40 tolas at the price of Rs. 21. 7as. 10p. per tola.

Gold bullion standard.

The third type of gold standard is known as the *gold exchange standard.* It was evolved before the first world war in India and other eastern countries. It became very popular after that war when, owing to their poverty, many countries found it difficult to adopt the full-fledged gold standard. Under this standard gold coins do not circulate within the country. The local currency, consisting of bank notes and token coins, was convertible into foreign exchange based on gold at a fixed ratio. India, which was on this standard before 1917, maintained a large reserve in London, and rupee coins were convertible into sterling (which were gold coins) at the ratio of 1*s*. 4*d*. per rupee.

Gold exchange standard.

How the gold standard works : The working of gold standard can be illustrated in this way. Let us suppose that gold coins are the only media of exchange within the country. Therefore, given the volume of goods, the price-level was determined by the amount of gold coins in circulation, which were in their turn dependent on the supply of gold in the country. In practice there are other media of exchange, like notes and bank deposits. Their presence, however, does not alter the fundamental forces at work. The volume of note-issue was usually kept in a fixed relation to gold reserves, and the volume of bank deposits also bore a more or less fixed proportion by law or by custom to the reserves of banks, —though the relationship was not as exact as in the case of note-issue. Therefore the total volume of currency in a country was connected in a more or less rigid relationship to gold reserves. When gold was imported into the country, the volume of currency increased and prices rose, and *vice versa* when gold was exported. The connection between gold movements and price-levels was not, however, as automatic as was assumed in these lines. It was modified by the credit policy of banks, particularly of the Central Banks and their bank-rate policy. When the bank-rate was higher, borrowing was checked and prices fell. Conversely, when the bank-rate was lower, prices rose. In practice, Central Banks in pre-war days changed their bank-rates in accordance with changes in their gold reserves. When gold reserves dwindled owing to the export of gold, the bank-rate was put up. Prices fell. Similarly in the country which gained gold, the bank-rate was lowered, and prices went up. In this inter-connection between gold movements and price-levels lay the so-called automaticity of the standard.[2]

Functioning of gold standard.

Influence of gold movements.

Externally, countries adopting the gold standard possessed stable rates of exchange determined by the gold contents of coins. When, owing to an adverse balance of trade, the actual rate deviated from this par of exchange by more than the cost of sending gold, it would be exported

[2] Dr. F. Mlynarski. *The Functioning of the Gold Standard*, p. 15.

from that country, and its price-level would fall. Since everybody prefers to buy where prices are low, its exports will increase; and to sell where prices are high, its imports will decrease. The balance of trade will improve and the rate of exchange will move towards par.

This is an outline of the way in which gold standard worked under the simplest conditions. It has been claimed by many writers that gold standard was automatic in operation, and that there was scarcely any element of management in the working of the gold standard. But this is a misreading of the actual working of gold standard. There was actually a large degree of management even during the period before the first world war. There was no automatic relationship between the volume of bank deposits and gold reserves. Movements of gold between different countries were modified to some extent by the actions of the Central Banks. In fact, it is now admitted that much of the success of the gold standard before that war was due to the predominant position occupied by England in the world's money market, and the prudent utilisation of its position by the Bank of England.

How far gold standard is automatic in operation?

The degree of management increased considerably before the last war. Increasing use was made of the open market policy evolved before the first world war. It was also perceived that attempts should be made to keep prices stable as far as possible with central banking methods. The need for management increased considerably in the inter-war years. Owing to reductions in the costs of gold transports, the difference between two gold points became narrower. This made the currency systems more sensitive to international disturbances. A slight disturbance in any country, or a small change in the rates of interest would now lead to gold movements. The existence of a large volume of international short-loan funds threatened serious dangers to the stability of economic systems. The investor on the continent with keen fears of inflationism in his mind, would not risk his earnings in long-period investments. Anything which would excite his distrust would lead him to move his funds

Gold standard is a managed standard.

from one country to another considered more safe. Hence the constant movement of these funds between different centres rendered the task of Central Banks very difficult. In their anxiety to protect the domestic money market, and to secure reasonable stability, Central Banks began the practice of "sterilising" unwanted gold imports by the sale of government securities. Exports of gold were not allowed to affect prices as these were "offset" by the purchase of securities in the open market. Gold movements thus ceased to exercise any influence on the price-level. And the gold standard became a fully managed standard.

Rules of gold standard game.

It is necessary at this stage to discuss what came later to be known as "the rules of the gold standard game." There are two fundamental rules which are supposed to be followed to make gold standard successful. The first is that gold movements should be allowed to exercise their full influence on prices. When gold comes in, credit should be expanded. When gold goes out, there should be a contraction of credit in that country. Secondly, the financial and commercial policies of each country should be so devised as to make possible proper adjustments of balances of payments and the real transfer of net payments. Creditor countries should be prepared to allow an excess of imports over exports, and should not take such steps, either by tariffs or other methods, to cut down the volume of imports through which debtors would be paying their debts.

Break-down of the gold standard : None of these rules were observed in the working of the gold standard in the inter-war years. Almost all countries violated the first rule. Gold movements were not allowed to exercise their natural influence on prices. England which was continually losing gold during this period, took steps to offset effects of these movements on the domestic price-level through the purchase of securities. The U.S.A. which was receiving large imports of gold, sterilised these imports with a view to keep prices stable. The second rule was also violated by three most important countries, England, France and the U.S.A. It is admitted on all hands that when England returned to gold at its old parity, there was considerable over-valuation of

sterling in relation to dollar by about 10 per cent. Though the rate of exchange was fixed at a high figure, wages and other money costs had not fallen in that country to a sufficient degree. It was necessary, therefore, that England should take steps to lower her wages and other costs. But that adjustment was never made. Her economic system proved too rigid, and the authorities had not the courage to force down wages. The result was that her exports could not compete in the world markets in view of her high costs. There was, therefore, a constant tendency towards unfavourable balance of trade and towards gold exports. Gold standard presupposes a flexible economic system, where prices should move in accordance with gold movements. No wonder that with inelastic prices, and costs, England was the first country to give up gold standard.

France had, on the other hand, under-valued her currency when she returned to gold. As a result, she developed a large foreign surplus. This surplus ought to have been invested abroad if equilibrium was to be maintained. But the French investor was not willing to lend his money abroad. Only a part of the foreign balance was lent abroad in the form of short-term deposits, and the remaining portion was brought into France in the form of gold. France absorbed large quantities of gold during this period. But these imports were not allowed to raise the price-level. The U.S.A. emerged as the creditor country after the first world war. A creditor country must be ready to receive her payments in the form of imports of goods. But America became violently protectionist during this period, and shut out imports by a high tariff wall. Debtors were, therefore, forced to send gold. But these gold imports were not allowed to exercise their influence on prices.

These were two most important reasons for the breakdown of gold standard after 1931. A world which has not learnt to observe the rules of the gold standard game should not expect a smooth functioning of that standard. There were also other equally important reasons. The maintenance of the gold standard became a highly complicated task during this period. The shortening of gold points made the currency system of each country extremely sensitive to every

passing wind which blew in the international money market. And at the same time the number of storms and stresses increased considerably during this period. The constant movements of large volumes of international short-term funds (justly called "bad money") between different countries brought excessive strain on the delicate machinery of gold standard. In fact, the immediate occasion for the break-down of the gold standard in England in 1931 was caused by such a withdrawal of short-term funds as a result of an international banking panic. In addition to these, a number of changes occurred in the economic system of the world which were not favourable to the smooth functioning of the gold standard. The war left a legacy of debts and reparations. The payments of these threw a great strain on the mechanism of international trade and exchange. Debtor countries began to lose gold and so adopted restrictive measures in self-defence. Not only were the economic difficulties serious but the political tension and the uncertainty resulting from the forced payment of reparations rendered the smooth working of the economic system an impossible task. Another important cause has been the development of an acute protectionist feeling in almost all countries. The erection of huge tariff walls made the payment of war debts and reparations impossible.

The cumulative result of all these causes was the break-down of the gold standard in all countries of the world. An international standard cannot be worked successfully in a mad nationalist world.

Merits and demerits of gold standard : The main advantage of gold standard is that it provides a country with a currency which is universally acceptable. The gold standard is the only international standard the world has ever known. Other benefits have also been claimed for gold. By ensuring that the local currency should be convertible into gold, it puts a limit to the amount of money that the authorities can issue. They cannot issue more paper currency notes unless gold reserves kept against these notes also increase. For all countries of the world, the total amount of money that can be issued by them depends on the total amount of gold

It is a check to inflation.

produced from the mines. Hence so long as a country is solidly linked with gold, there is no chance of an excessive issue of paper currency. In this sense, gold standard was regarded as "fool-proof" or "knave-proof." It was also claimed that it provided an automatic monetary system. In the past, when a country has been divorced from gold, the result has been a mismanaged system that has seriously disturbed its economic life.

It secures relative stability of prices.

Thirdly, it secures comparative stability of prices. Unlike other commodities, the output of gold, on which depends the whole of the circulating media, is not subject to seasonal or other short-period fluctuations. Had wheat been adopted as the standard, a poor harvest in one year would have seriously diminished the reserves of banks, and the price-level would then have become dislocated. But on account of its extreme durability, the existing supply of gold is so large that the annual output is but a small fraction of total output and its supply is, therefore, relatively more stable than that of any other commodity. Gold prices, it is claimed, enjoy a greater degree of stability.

Stable exchange rates.

Another important advantage is that gold standard secures the stability of foreign exchange rates. The great merit of this stability becomes at once apparent when we see how its absence, owing to the break-down of the gold standard, has checked the development of international trade in recent times. This stability of exchange rates also secured a certain harmony in the movements in price-levels of different countries.

It does not check inflation.

A close examination of these merits will show that many of them are of doubtful validity. We have already seen that gold standard is not an automatic standard. The Central Bank has to manage the monetary system to remain on gold standard. And to remain on gold standard is not always a simple or easy task as France found during 1934 The severity of the trade depression which set in after 1929 was due to a large extent to the attempt made by different countries to stay on the gold standard. A fool-proof standard may,

therefore, be a foolish standard. Gold standard does not serve as an effective guarantee against inflation. It ties down the value of the currency to that of gold. If the value of gold falls as a result of the large output of gold, prices will rise.

Secondly, the gold standard did not establish stability of prices either over time or over space. If, year after year, the output of gold continues to increase or decrease, prices will rise or fall over a long period. In fact, such has been the experience of the world throughout the nineteenth century. Between 1849 and 1874, prices rose because new mines in Australia and California increased the supply of gold. Between 1874 and 1896, prices fell because of the decrease in the production of gold. Similarly, internal prices in different countries, though interconnected with each other through gold movements, showed considerable ups and downs according to the conditions of trade and finance.

It does not secure the stability of prices over space or time.

The future course of prices is also highly uncertain under gold standard. Prices are likely to be upset by "the discovery of new mines or processes of mining, by a decision on the part of some states to achieve gold standard, or of some other states to abandon it, by a sloughing off of the hereditary taboos of the Indian ryot, or the London banker."[3]

Another disadvantage of gold standard is that it limits the discretion of monetary authorities. Gold standard requires that countries owing allegiance to it must move in unison. So a country which adopts gold standard has to surrender its authority in monetary matters, and to move in step with other countries. It has to follow the average policy, or the average rate of contraction or expansion. But this may often go against its interests. Adherence to gold standard may make it impossible for a country to pursue a policy of capital expansion in order to achieve full employment after a depression.

It limits national autonomy.

Managed money : The expression refers to that monetary standard where the value of money is managed by the

[3] Robertson. *Money*.

Central Bank according to a particular plan. In that sense, all monetary systems are now managed. The term is, however, generally used to mean that monetary system where inconvertible paper money circulates, and where the currency system is managed by the Central Bank in accordance with a plan of monetary stability. Advocates of this standard claim that it will avoid all the defects of the gold standard. The Central Bank can control the movements of prices, untrammelled by any necessity of keeping sufficient gold reserves. It will be able to keep prices stable if that is considered desirable. This system will also ensure sufficient freedom for each country to manage its own affairs in its way, unhampered by the necessity of moving in unison with others. It thus enables a country to enjoy the blessings of autonomy in monetary affairs.

The working of the gold standard pre-supposes a flexible economic system. But since our economic systems have become rigid, it will again be impossible to work the gold standard satisfactorily. If we could raise or lower our wage-rates as we could do with tariff-rates, or prices, we should, of course, go back to gold. But that is not possible. Moreover, in view of the fact that the world's output of gold is diminishing, gold prices may fall and prolong depression. It is better, therefore, to remain on paper standard and try to keep internal prices stable.

Arguments against a paper standard.

These arguments possess great attractiveness, especially after our recent experience with gold. But on a calm consideration, it will be seen that the disadvantages of the paper system are more formidable than they appear at first sight. Advocates of the system forget the fact that gold standard like democracy itself is taken for granted as one of the essential things of national life. The suspension of the gold standard during the thirties only led to increased hoarding of gold by the public. So long as this preference for gold remains, some sort of gold trappings must be kept with our standard. Apart from this sentimental reason, there are certain inherent defects of a paper standard. Such a standard offers no security against inflation. Memories of the war-time inflation are so recent that it would be difficult

to inspire public confidence in the plan of a permanent paper standard. And without public confidence, it would not be possible to work the plan satisfactorily. *Secondly,* it would mean fluctuating rates of exchange. The intention is to stabilise internal prices and to let the exchange rates fluctuate in accordance with trade conditions. This would introduce great uncertainties in foreign trade, and hinder the free flow of international investment. Stoppage of the flow of international investment is one of the most important causes of the last depression, and since the way out cannot be easily found without a revival of international investment, the adoption of paper standards would only aggravate the situation. *Thirdly,* it would be impossible to maintain financial stability under such conditions. If, owing to some movements of the exchanges, a currency is under-valued, this will upset the balance of indebtedness of other countries. In defence the latter would introduce tariff walls, exchange restrictions, etc. The device of competitive depreciation of the exchanges would be adopted by some countries in the vain hope of capturing export markets, and this would destroy price stability in other countries.

Whatever the relative merits and demerits of these standards, the classical gold standard will never return. A full employment economy cannot be worked and maintained on the basis of the gold standard. The basic idea behind all plans for full employment is the necessity for undertaking expansionist measures for the purpose of driving out unemployment. But as Mrs. Robinson has pointed out,[4] gold standard has an "inherent bias towards deflation." A country losing gold must contract credit in order to maintain equilibrium in its balance of payments. But a country getting gold is under no necessity to expand credit, and will not usually do so. The result on balance will be further deflation in the gold-losing country, leading to much unemployment. Hence no country is now willing to go back to the gold standard.

But it does not mean that gold will lose its function altogether. America as the holder of the largest quantity

of gold and the British Commonwealth as one of the largest producers of gold have an equal interest in the maintenance of gold prices. As a result, a compromise has been embodied in the proposals incorporated in the International Monetary Fund agreement. Gold will now remain as the basis for the settlement of international balances and exchange rates are to be fixed on the basis of gold. But these exchange rates can be varied within certain well-defined limits.[5]

[5] See Chapter 46.

CHAPTER XXXIII

CREDIT

What is credit? Etymologically the word 'credit' means 'giving in trust' or 'trusting'. A credit exchange is best understood by considering what is a cash transaction. In a cash transaction, goods are sold and cash is paid at once. Whereas in a credit transaction, goods are sold, not against cash, but against the promise to pay cash at a later date. Since in a credit transaction, cash payment is to be made at some future date, it involves trust on the part of the person giving credit. The basis of credit is confidence. The lender must have confidence in the borrower that he will be able to repay as promised, and that he has the intention to repay.

The basis of credit is confidence.

Credit exchange possesses certain superiority over money exchanges. The introduction of money remedied many defects inherent in the barter system. But there are certain difficulties in the system of money exchange. We are all willing to accept cash; but if we have sold fifty thousand rupees' worth of goods, we would not be willing to accept actual cash in exchange. Such a huge sum of rupees would be very inconvenient, and the danger of guarding it would be very acute. Moreover, if we have bought goods worth many thousands at a great distance, consider the expense and the danger of transporting and delivering so much cash to sellers. These difficulties are obviated by the use of credit.

Functions and utility of credit.

From the standpoint of the ultimate use of credit, it may be classified into consumption credit or production credit. The borrowed credit may be consumed at once. In that case, it is known as consumption or consumer's credit. Many shopkeepers grant credit to their customers who are unable to pay cash. The system of hire purchase or instalment buying is also an instance of such type of credit. Credit may be so invested as to yield a surplus over and above what is required to be paid by the borrower. Credit then performs

the function of capital and may be considered to be an equivalent to an increase of capital. This type of credit is known as production credit.

Credit has further been classified into commercial credit and bank credit. The former refers to that type of credit which is used in financing the manufacture and marketing of goods. A wholesale dealer may agree to sell goods to a retailer on the understanding that the latter will pay his dues within three months. That is, he has granted commercial credit to the retailer. *Hundis,* bills of exchange are good instances of instruments of commercial credit. The essence of *bank credit* may be found in the answer to the question, 'where do banks get the money they lend?' A bank with a cash reserve of Rs. 10,000 is able to lend at least 5 to 6 times (if not more) that amount. This is possible because depositors and the public have confidence in the bank's solvency. The bank, therefore, lends its credit. Bank notes are good instance of such credit.

Types of credit instrument : There are various types of credit instruments in vogue in a modern community. These may be (*a*) cheques, (*b*) bank notes, (*c*) government notes, (*d*) bills of exchange, (*e*) promissory notes, (*f*) banker's draft, (*g*) book-credit, etc.

(*a*) A cheque is an order by a person on a bank to pay the bearer of the cheque a certain sum of money out of his deposits. A cheque is a credit instrument so long as it is not presented for encashment. It also rests on the confidence of the payee both in the person who draws it and in the bank on which it is drawn. (*b*) Bank notes are issued by banking institutions. A bank note is simply a promise by the bank to have it converted into legal tender on demand. Bank notes have circulation among those members of the public, who have confidence in the solvency of the bank. Notes of well-known banks have easy circulation and are often legal tender. Note issues are now-a-days regulated by law, and in most countries only the Central Bank has the monopoly of note issue. (*c*) Government notes are similar to bank notes, except that they are universal legal tender. So long as Government notes are convertible, they are regarded as good

as standard money or gold. They are based on the confidence of the public in the Government that it is able to convert them into standard money as soon as presented. (*d*) A bill of exchange is an order made by a seller of goods upon the purchaser of goods to pay the stated amount of money after a definite period of time. The bill of exchange differs from a cheque only in this that cheques are payable on demand while bills are to be paid after a stated period. 'A cheque is a bill of exchange payable on demand'. (*e*) A promissory note is a note featuring a promise of the borrower to the lender, perhaps supported by the guarantee of some third person in whom the lender has confidence. Most often the lender or the bank deducts the stipulated amount of interest from the sum and then advances the remaining amount to the borrower. (*f*) A banker's draft is a cheque drawn by one bank upon another. It is drawn when one bank takes a loan from another, or a bank is given accommodation in time of distress. (*g*) Book-credit is effected when a tradesman sells on credit or a bank advances money, the sale or advance being entered in the account books of the tradesman or of the banker. These book-entries are legally recognised as evidences of credit even when they are not endorsed by the debtors. These book-credits are granted on a large scale by businessmen to each other and occasionally set-offs are made, the balance being paid in cash. This practice of set-off reaches its high water mark in the system of clearing houses for banks. There are other types of credit instruments such as bonds and debentures of joint stock companies, which are all negotiable instruments and find ready market whenever needed.

Paper money : Paper money consists of bank notes and government notes which have general circulation. It does not include cheques or bills of exchange which have merely a limited circulation. It is generally issued by Central Banks, but in some countries paper notes are issued by the Government.

Paper money may be either *convertible* or *inconvertible*. *Convertible paper money* is redeemable into standard metallic money or bullion on demand. It has been found

that only a small portion of the outstanding notes is presented for redemption at any particular time ; hence only a small proportion of the actual amount of notes issued is kept by the note-issuing authority in cash or standard money as necessary. Another kind of convertible paper money may be simply a *certificate of deposit,* where metallic reserves are exactly equal to the nominal value of the notes issued. An example of such certificates of deposit is the gold and silver certificates of the United States.

Inconvertible paper money consists of notes for which standard metallic money or bullion cannot be obtained on demand from the issuing authority. Inconvertible paper money is generally issued by governments. They may also be issued by Central Banks in times of emergency by the suspension of the Act under which they are legally obliged to convert their notes into full-bodied money. Inconvertible *paper money* is called *fiat money,* because its use and value depend on the command of the government. It has circulation only because the public have confidence in the government that it will be able to maintain its value.

Advantages and disadvantages of paper money : The advantages of the use of paper money are manifold. *Firstly,* there is an economy in the use of metallic money. In no country is an equivalent reserve of gold or other full-bodied metallic money kept by note-issuing authorities. There is invariably an uncovered portion of note-issue, and to that extent the country can save the cost of securing gold or silver. If any country uses inconvertible paper money, the cost of monetary circulation to it is almost nil and in this respect it has an advantage over other countries. *Secondly,* paper money, even when fully convertible, reduces the loss to the community through the wear and tear of coins by constant use. *Thirdly,* anyone can carry with him paper money of any value without much difficulty. Large payments can be made through it and it can be sent to long distances without much cost.

The *disadvantages* of paper money are also not negligible. *First,* the temptation to over-issue is too much with a government in difficulty. If there be too much over-issue,

the paper-money becomes inconvertible and depreciates in value in terms of full-bodied metallic money. *Secondly,* some difficulty is introduced in foreign transactions by the use of paper money. Foreigners do not accept paper money of other countries. Those who have to make payments to foreigners can export full-bodied metallic money, but there is no such advantage when paper money is used. *Lastly,* the value of paper money is more unstable than the value of commodity money. The value of standard money fluctuates with the value of the metal; whereas the value of paper money depends upon the quantity of money issued. As the value of inconvertible paper money is generally unstable, rates of foreign exchange also become unstable. Hence the external trade of the country may suffer.

Principles of note-issue : As regards the principles on which note-issue should be based, there are two different schools of view:—the currency theory and the banking theory. Before the Bank Charter Act of 1844 had been passed in England, two schools had sprung up regarding the true principles of note-issue. The exponents of the *Currency Theory* held that notes are issued only to provide an economical substitute for gold coins; but in order to ensure full convertibility of these notes, gold should be kept by the note-issuing authority to the full value of notes issued. If a full backing of gold for the notes issued is lacking, it may not be possible to convert them at times, and people may lose confidence in such notes. According to this school, note-issue should be limited to the amount of gold held by the issuing authority and the quantity of note-issue will automatically expand or contract with the inflow and outflow of gold into and out of the country. Thus the expansion of currency will be automatic and will not be dependent on the whims of issuing authorities. This theory misunderstood the role of credit. Credit is a good substitute for metallic currency, and with its help the total monetary circulation of the country can be expanded whenever required. One merit of a good currency system is its elasticity, and that cannot be ensured if the currency principle is followed in the issue of notes.

The Currency Principle.

The exponents of the *Banking Principle,* on the other hand, maintained that from experience it was found that only a certain proportion of the actual notes issued need be kept covered by the issuing authorities in gold coins. If there is an excessive issue of notes, they will be returned to the bank for encashment, and if an adequate reserve is kept full convertibility will be ensured. Further, such a principle has the merit of elasticity. The total monetary circulation can be expanded or contracted according to the needs of trade, which can be best gauged by bankers and expert financiers.

Banking principle.

Though the currency principle was accepted in the Bank Charter Act of 1844, subsequent history revealed the wisdom of the banking principle. The vast expansion of England during the latter half of the 19th century was possible only because of the adoption of the device of cheque system—the adoption of which nullified to some extent the mischief done by the acceptance of the currency principle by the Bank Charter Act. But we should remember that exponents of the currency principle of note-issue were warned by the history of many joint-stock banks during the earlier half of the nineteenth century, when many banks came to grief by over-issue of notes without sufficient reserves.

Systems of note-issue : In accordance with the currency principle, various limitations have been placed on the right of note-issue. In this section, we shall review these limitations.

(1) *Fixed Fiduciary System.* Under this system, the Central Bank is allowed to issue a fixed amount of notes without keeping any gold reserve. This portion is called fiduciary issue and it is backed by government debts or securities. Notes issued above this amount must be backed by 100 per cent reserve in gold. This system prevails in England, where, under the Bank Charter Act of 1844, the Bank of England was allowed to issue notes up to £14 million without gold backing. This limit was raised to £260 million in 1928 and to £300 million The object of this system is to

Defects of the system.

provide adequate reserves for securing the convertibility of notes. But this has made the currency system inelastic. Currency could be expanded, not in response to trade requirements, but only when gold reserves are increased. In times of crisis or panic, when there is an urgent need for the expansion of note-issue to meet demands of the panic-stricken people, provisions of the Act have to be suspended so as to give the Bank unlimited powers of note-issue. Further, it locks away a vast amount of gold unnecessarily. Owing to these reasons, the Macmillan Committee urged the abolition of this system.

(2) *Maximum Fiduciary System.* Under this system, a maximum amount is fixed upto which the Bank can issue notes without any gold reserve, and this maximum is generally well above the average annual circulation of notes. This maximum is raised from time to time, as the business expands and the needs for currency increase. This system was prevalent in France before 1928, and it was recommended by the Macmillan Committee for adoption in England. The great merit of this system is that it does not lock away gold unnecessarily and leaves the question of reserve absolutely to the discretion of the Bank.

(3) *Proportional Reserve System.* Under this system the Central Bank is required to keep a certain percentage, generally varying from 25 to 40 per cent of gold reserve against the note-issue. This system became fashionable after the first war and France adopted it in 1928. The system was recommended for India by the Hilton-Young Commission, and it had been incorporated in the Reserve Bank Act. The only merit of this system is its elasticity. Against one gold coin in the reserve, three notes can be issued if the ratio prescribed is one to three. But any contraction of currency would also be violent. When one gold coin is withdrawn from the reserve, three notes have to be cancelled. Whereas under the other system only one note has to be cancelled. Moreover, the system locks away unnecessarily a huge amount of gold which is quite unavailable for purposes of conversion. Let us suppose that the Bank keeps just one-third reserve in gold and then one note is presented for

Defects of the system.

conversion. If one gold coin is paid, the total reserve would then be less than the legal proportion required. Therefore the Bank cannot, then, convert its notes without breaking the law. The system is similar to the regulation that there must always be one cab at the station so that passengers could always be sure of getting one. If there is only one cab and a passenger alights, that cab cannot leave the stand and the passenger's position would be the same if there were no cab at all. The system is thus clearly indefensible.

(4) The fourth method is a variation of the third. The Central Bank is allowed to hold part of its reserves in "foreign exchange" (devisen), including foreign currency, deposits in foreign banks, bills, etc. The foreign currency must of course be on gold standard. Thus the Indian Reserve Bank can keep part of its reserves in sterling bills. This method is adopted to secure an economy of gold. So far as this is a variation of the third system, the objections stated therein are valid against it. Occasions may arise, in times of panic, for the issue of emergency notes. In England, when a crisis occurred requiring the issue of a great amount of notes, the Bank Act was suspended and the Bank of England was empowered to issue as many notes as were necessary to restore confidence. In Germany, where the third and the fourth methods prevailed, the reserves of the Reichsbank might fall below the legal ratio provided a tax on the deficit was paid.

There should be no connection between gold reserves and note-issues.

The right principle of regulation : The question can be divided into two parts. The first is concerned with the question—whether there should be any legal provisions tying the amount of note-issue with the amount of metallic reserves. And a second question is, what is the right amount of metallic reserves that a Central Bank should keep to meet its obligations? Regarding the first question, it is best not to fetter the discretion of a Central Bank in any way with regard to the note-issue. Now that gold coins have been withdrawn from circulation, notes will be presented for conversion into gold bullion mainly for export purposes—to meet an adverse balance of payments. Hence it is desirable that reserves

should not bear any relation to the volume of note-issue. When it is thought undesirable to limit the discretion of the Central Bank with regard to the volume of credit in any way, what logic is there in rigidly limiting the issue of notes? It is also desirable in the interest of price-stability to give the Bank full discretion with regard to the management of its gold reserve and not to tie it in any way with the note-issue. When we are laying upon the Central Bank the highly important duty of regulating the volume of credit and the price-level, why should we not trust in its capacity to maintain adequate reserves against note-issues? The right principle is, therefore, to lay down that the amount of gold reserves should bear no relation to the volume of note-issue. But to provide against the ultimate danger of over-issue, it might be useful, following the French system before 1928, to fix the maximum amount of notes that can be issued. This maximum should be well above the average amount of note circulation, and should be revised from time to time. Moreover, it might be necessary to decree that the Bank should keep a minimum amount of gold reserve, partly in order to inspire public confidence and partly as an ultimate reserve to be used only on grave national occasions. Excepting these two limitations, the Central Bank's discretion in the issue of notes should be free.

The answer to the second question depends on the proper appreciation of the functions of gold reserves in a monetary system. Formerly gold reserves were kept for the purpose of converting paper notes into gold coins. But since gold coins have been withdrawn from circulation, there is no necessity for keeping any gold reserves for this purpose. The existence of gold reserves, assuming of course the establishment of gold standard, is now seen to be necessary only as a medium of exchange in international payments. The amount of gold reserves should, therefore, depend, not on the amount of note-issue, but on the extent of any possible adverse balance of payments. Reserves should be sufficient to enable the Central Bank to meet a short period adverse balance of payments before it is able to correct the situation by adopting suitable remedial measures.

Thus calculated, gold reserves would vary from one country to another. Countries which are international banking centres, or which are heavily indebted, or which depend on a relatively small number of goods for export purposes would require larger reserves than other countries.

CHAPTER XXXIV

BANKING

Definition of Bank : Just as we define money by its functions, so the best definition of a bank is by its functions. A banker is a dealer in credit:—he borrows from the members of the public, and lends to merchants or manufacturers. He borrows by accepting deposits, and lends by way of advances against goods or securities or by discounting bills. A bank is, therefore, a person or a corporation that deals in credit, *i.e., accepts* deposits from the public, withdrawable by cheques, and advances loans of various sorts.

The system of banking is very ancient. It was prevalent in India, Greece and Rome. It arose out of the logical fact that people who possessed surplus coins deposited them for safe-keeping with persons in whom they had confidence, payable after a period of time when they would require them. Holders of these surplus coins soon found out that it was profitable to lend the money, provided loans were repaid before the date when money would be demanded. Probably bankers, as they really were, gave signed papers to their depositors as evidences of the deposit money. As people had confidence in the integrity and solvency of the bankers, these signed papers would pass from hand to hand in settlement of transactions. Seldom many of these would be presented for repayment to the bankers. These papers were the origin of notes. And as people had confidence in the credit of the bankers, only a small proportion of notes would be presented for encashment during a period. The latter were able to lend out the major portion of their deposits with safety, thus earning a decent profit with other people's money. As the business of lending became more and more profitable, bankers began to offer interest on the money deposited with them, at a rate lower than that obtained on loans—the difference constituting their profit. In course of time cheques were adopted, and this imparted a great elasticity to the system.

Thus came into existence the system of what is known variously as deposit or commercial banking. It should be noted that when using the term 'bank', we shall refer to commercial banks, *i.e.*, banks which deal only in short-period credit. There are also other types of banks, such as Savings Bank, Investment Bank, etc.

Functions of Banks : A commercial bank is a dealer in short-term credit. It collects the surplus balances of individuals and finances the temporary needs of commercial and industrial firms. The *first* task is, therefore, the collection of the savings of the public. This the bank does by accepting deposits from its customers. Deposits arise in two ways.—First, members of the public bring legal tender money to the bank which then credits them with a deposit account in its book, withdrawable by cheque. Or, deposits may be created by the bank itself by giving loans to its customers. The borrower is then credited with a deposit account which he can use as needed.

(*a*) It collects the savings of the public.

Its *second principal* function is to give loans. This the bank does by discounting the bills of exchange, advancing loans against goods or other securities, by way of overdraft, etc. Every banker knows that though the deposit may be demanded back at any time, only a small part of the total will be withdrawn at any time. Experience teaches him what margin should be kept to meet these demands. The rest he can obviously employ in giving loans and advances to merchants and manufacturers. These loans may be made against security; the security may be gold, or stocks and shares, or goods either in course of manufacture or in course of movement from one place to another. Or, they may be given without any tangible security, on the promissory note of a customer in whose solvency the banker has faith.

(*b*) It gives loans and advances.

A *third* function is to provide an inexpensive medium of exchange—a note or a cheque. Notes grew out of the receipts of bankers for money deposited with them. These notes passed from hand to hand, and were generally preferred because they were easily carried and were

(*c*) It issues notes and creates other media of exchange.

more convenient and safe. In recent times, the issue of notes has become the privilege of a single bank,—the Central Bank. In the more advanced countries, they have been replaced by cheques. The issue and the encashment of cheques are similar to those of notes.

(d) Various other functions.

In addition to these, a bank performs a variety of other functions. These functions are of three types:—financing of foreign trade, agency services and general utility services. Banks finance the foreign trade of the country by accepting or collecting bills of exchange drawn by customers, and by transacting other foreign exchange business. *Secondly,* they act as the agent of their customers in collecting and paying cheques, bills, dividends, subscriptions, and insurance premia, etc. They also sell and purchase shares and securities for their customers through the stock brokers. *Lastly,* they perform miscellaneous services for the benefit of their customers. They act as custodians of the valuables of the customers, and take care of the marketable securities, bonds, deeds of property, etc., of valuable boxes and parcels; collect interest and dividends; act as a trustee, or an executor of wills, or an administrator of family trusts; are used as a business address by its customers; and issue various forms of credit instruments, *e.g.,* letters of credit, traveller's cheques, etc., which, being easily negotiable, are of considerable help to the customers.

These are the technical functions of banks. Another way of looking at the thing is that the chief function of modern banks is to supply liquidity to the economy. A bank is a big substitution centre for liquidity, which takes in deposits from the public and supplies liquidity to the economic system.

Balance-sheet of a Bank : Another way of analysing the functions of a bank is to study its balance-sheet. Therein the liabilities and the assets of a bank are set out. A typical balance-sheet is like this.

Liabilities.	*Assets.*
Paid-up Capital	Cash and balances with the Central Bank.
	Balances with and cheques in course of collection on other banks.

Liabilities.	*Assets.*
Reserve Fund	Money at call and short notice.
Current Deposit and other Accounts	Bills discounted.
	Investments.
Acceptances, etc. for account of customers	Advances to customers.
	Liabilities of customers for acceptances, etc.
	Premises.

On the liabilities' side paid-up capital denotes the capital of the bank, and the reserve fund is the accumulated resources intended for contingencies. These two represent the bank's liability to shareholders. Deposits are of two kinds, current or demand deposits, and fixed or time deposits. Current account deposits are those deposits which are withdrawable on demand by cheques; they are called 'demand' deposits in America. Fixed deposits are those deposits that can be withdrawn only after giving notice to the bank for a week or a month or more. In America, such deposits are called 'time' deposits. The usual practice is not to give any interest on current accounts, while fixed deposits earn some interest. In India, interest is generally allowed on current accounts also, but customers are required to maintain a minimum balance with the bank. The last item is of the nature of what is called 'contingent liabilities' *i.e.,* they have to be met only in certain conditions. The bank may have 'accepted' a bill on behalf of its customer; it then becomes liable for payment of the sum mentioned in the bill, in case the customer fails to pay. Hence this item is balanced on the assets' side by customers' liabilities for acceptances.

The side of assets represents more faithfully the varied nature of a bank's functions. The first item represents the cash reserves of the bank to meet the demands of customers, and hence its first line of defence. This cash reserve is generally a certain proportion of the total liabilities of the bank to its depositors and every bank knows from its experience what proportion it should aim at keeping in reserve. The general rule followed by British banks is to keep a reserve of 8 per cent of their deposits. In India, scheduled banks were keeping about 14 to 16 per cent of their deposits in this form. The second item 'balances with and cheques in course of collection, etc.' explains itself.

"Money at call and short notice" means loans granted for very short periods. It consists of loans to bill brokers payable at call or seven days' notice, and loans to the stock exchange. These loans are generally backed by adequate collateral, *i.e.*, first class bills or securities. They represent the bank's 'second line of defence'. The essence of these loans is that they can be recalled at very short notice; such a 'reservoir of short money' is essential for every bank; for at any moment, an exceptional demand may be made on its reserves. Whenever the bank faces such an exceptional depletion of its reserves, it will at once recall some of these loans, or refuse to renew them. But as a rule, in normal times, these are renewed. The British banks usually invest about 7 per cent of their deposits in this way.

Call loans.

Bills of exchange, generally of three months' duration, are very good short-term investments. The fact that they will mature within a short period makes it unlikely that their value would fall very much; and where there is a good bill market, they can be discounted at very low rates. A bank will always arrange its bills in such a way that a considerable portion of them will mature at a time when large withdrawals of cash may be expected. In recent times, the importance of commercial bills is declining on account of the comparative lack of such bills. Treasury Bills (*i.e.*, 3 months' bills issued by the Government) are assuming greater importance in the money markets. It should be noted that the amount invested by banks in bills tends to vary inversely with their cash position. When investment in bills declines, banks try to keep larger cash reserves, and *vice versa*. On the whole, it has been found that banks generally aim at keeping about 30 per cent of their assets in the form of cash reserves, call loans and bills.

Bills discounted.

"Investments" are mostly in government securities and municipal bonds, or in industrial shares, etc. They yield a fixed income and bring steady profit to the bank. They act also as a counterpoise to the customers' demand for money. When the demand for loans increases, the bank sells its securities and increases its

Investments.

advances to customers; and the converse happens when the demand for loans decreases. But they are considered by orthodox theory to be less liquid than bills. For though in normal times, such securities are easily saleable, yet in moments of crisis, buyers may be few and their prices may fall so low that selling would be unprofitable. They may thus become 'frozen'.

"Advances to Customers" represent the bank's loans to its customers against good security or even without security. They are usually granted for short periods, not exceeding six months for varied purposes, *viz.*, to help the temporary needs of any legitimate business, or as a temporary loan to companies for the purpose of obtaining fixed capital before new issues are floated and subscribed in the market, etc. These are the most profitable of bank assets as banks charge interest at the rate of one per cent above the bank rate with a minimum of five per cent.

Reserves : "Successful banking," it has been said, "depends largely on the management of the reserve." The reserve consists of cash and deposits with the central bank which banks keep to meet the demand for withdrawals. The reserve must be sufficient without being excessive. If it is insufficient, the bank is courting insolvency, if it is excessive, that means idle money and loss to the bank. The bank manager, therefore, must strike a nice balance between liquidity and cupidity and in this lies the ability of management.

There is no rigid fixity about the actual amount of the reserve that is required. It will be governed by the class of business conducted by the clients of the bank. If depositors are active businessmen,—mostly industrialists, they would withdraw more cash on or before the pay day. If they are agriculturists withdrawals will be smaller and fewer, and the reserves need also be smaller. Secondly, it will also depend on the season of the year. If the crop-moving season is near, there will be a drain of cash to the interior to pay for the crops; the reserves would have to be kept larger. Lastly, there is always the chance that some irregular or unpredictable demands will be made on account of (say) international complications. It is no wonder that the problem of keeping

the exact amount of reserves will tax the ability of a manager.

But in the last resort, the problem of reserves resolves itself into the problem of the liquidity of assets. Loans granted by a bank must be, as far as possible, immediately realisable. In normal times "call loans" can be immediately turned into cash, and hence are counted as, "the second line of defence." Bills and government securities are generally considered as good as cash; except in abnormal times, bills can be discounted at reasonable rates and government securities sold in the market. In abnormal times, when the market is completely disorganised, they are of course unsaleable. But then good bills could be rediscounted at the central bank and loans could be obtained from the latter against these securities. The right position for a bank manager is that he should arrange his bill portfolio in such a way that a few bills are constantly maturing and that a good many should mature before the day on which large withdrawals are likely to be made.

Do banks create credit?[1] Deposits of a modern bank, it has already been stated, are created in two ways. In the first place, members of the public bring cash to the bank, and are credited with a deposit account in its books. Deposits in Postal Savings Banks are created in this way. In the second place, the bank agrees to discount the papers of a customer, or to advance loans to him. Instead of paying away cash, the bank opens a deposit account in the name of the customer, who will then be allowed to withdraw it as required. Every loan by the bank, therefore, creates a deposit.

Loans make deposits.

It has been argued by Mr. Hartley Withers that "loans make deposit"; that the initiative in the creation of credit lies with the banks. Of course borrowers who now possess a deposit account may withdraw their deposit in cash to meet their liabilities to others. But these 'others' may also be customers of this bank and they will deposit the sum with it, or they may be customers of other banks, and will deposit

[1] For an able discussion of this topic, see Hayck—*Monetary Theory and the Trade Cycle*, pp. 150-167.

their money with them. In any case, so long as a loan is due, a deposit to that amount will be outstanding in the books of some bank or banks.

To this theory about bank's creating credit, vigorous objections have been made by the late Dr. Walter Leaf[2] and Cannan.[3] In their opinion, the initiative in the creation of credit does not lie with bankers, but with depositors. What happens is that depositors do not withdraw the greater proportion of their deposits, and so banks are able to advance loans. The mistake of these theories lay in looking the wrong way. It is not loans which make deposits. Rather it is the unwithdrawn deposits that are lent. Hence there is no essential distinction between a bank and a cloak-room. Let us suppose that there are a hundred guests in an evening party, each arriving with a cloak, which he deposits with a cloak-room attendant. It is known that the party will not break up before (say) 10 P.M. In case some guests depart earlier, the attendant keeps ten cloaks in stock and lends out the rest to be returned by 9-30 P.M.[4] Has the attendant, in hiring the cloaks, created 90 cloaks? That is clearly absurd and so also is the myth about banks creating credit. Leaf has further shown, by analysing the balance-sheets of the "big five", that during the first months of 1926, though the advances of banks had increased greatly, their deposits actually decreased. How to explain this situation if we adhere to the opinion, 'loans make deposits'?

The implications of this controversy are important from the point of view of price-stabilisation. If the banking system exercises no control over the volume of credit; if depositors 'create' credit, then it may be difficult for the banking system to control the volume of credit and hence prices. A clear analysis is therefore necessary.

Let us, first of all, assume an isolated community which conducts no foreign trade. Let us further suppose that there is only one bank in the country, and that everybody keeps an account with that bank; further, no cash circulates and all transactions are settled by cheques. Under these

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[2] Leaf. *Banking*. pp. 101-104, also p. 126.

[3] Cannan. "The difference between a Bank and Cloak Room" in *An Economist's Protest*.

hypotheses, the volume of deposits of the bank will be determined by the volume of its loans. It will clearly create credit. Now we must remove the assumptions one by one, to bring the analysis in touch with realities. *First,* some cash is always used, and the bank is under an obligation to convert its cheques into cash. The bank must, therefore, keep a certain amount of cash reserves to meet the demands of its customers. *Secondly,* there is not one bank, but many banks. Cheques on one bank may be presented through other banks for collection. On the other hand, the bank will also possess cheques on other banks. Every bank will, therefore, always have some cheques in its favour or against it, and it is unlikely that the two will exactly balance.[4] The bank must therefore keep certain reserves to honour the cheques presented by other banks. Now the total amount of reserves generally bears a ratio to total deposits, and a bank knows by experience the approximate reserves that it must keep against its liabilities. When its actual reserves are greater than this amount, it will extend more loans; when reserves are lower, it will contract loans. The loan-policy of the banking system depends on its aggregate reserves.

Limits to the power of a bank in creating credit.

There are thus two limitations on the power of banks to create credit. Any particular bank cannot lend more than is warranted by the amount of its resources. If it does that its reserves will dwindle owing to the fact that it will have to pay away more cheques than it receives from other banks. Secondly, the creation of credit will be accelerated or retarded in accordance with the total reserves of banks as a whole.

The aggregate reserves of banks will depend on the policy of the central bank. If the central bank purchases securities from the market, the reserves of banks are increased.[5] When it sells securities, reserves are diminished. Thus the policy of the central bank determines the total cash reserves of the banking system, and the total reserves of the latter will determine their rates of lending. Cannan's

[4] See next section of this chapter.
[5] See next chapter for 'Open Market Policy'.

difficulty lay in the fact that he focussed his attention on deposits. Banks do not lend their deposits, they lend their credit. And in this process of lending the initiative lies with them.

There is, however, one important limitation. Lending connotes two parties—the lender and the borrower. There may arise conditions of falling prices and loss of confidence in which it may be difficult to find good borrowers. The bank may, therefore, find it impossible to prevent its volume of loans from falling. The power of creating credit is, therefore, incomplete.

Clearing Houses : "A clearing house is a general organization of the banks of a given place, having for its main purpose the offsetting of cross-obligations in the form of cheques." When there are many banks in a country, each bank will receive a number of cheques drawn on other banks, deposited with it for collection. A clearing house is an organization where these cheques are brought, and the mutual claims of each bank on others are offset, and a settlement is made by the payment of the difference. Suppose there are two banks, A and B. In course of the day, A will have some cheques, drawn on B, sent to it for collection. Similarly, B will also have some cheques drawn on A. At the end of the day, or often, representatives of A and B meet at the clearing house, and offset the claims as far as possible. Suppose A has due to it Rs. 10,000 from B and will have to pay Rs. 12,000 to B. At the clearing house, all these cheques are offset, and A pays the balance, *i.e.,* Rs. 2,000 to B, and the account is settled. In practice, all banks keep an account with a large bank, generally the central bank, and A pays B by giving a cheque for the amount drawn on the central bank. Thus a great economy in the use of cash is secured, and all clearing transactions are settled by transferring balances kept at the central bank from the account of one bank to that of another. In this way, huge amounts are settled in one day.

CHAPTER XXXV

CENTRAL BANKING

Since the first world war, the most important development in the field of monetary theory is the emergence of central banks with added prestige and power. The establishment or the re-organization of central banks became one of the essential features of every scheme of financial reconstruction undertaken between the inter-war years. There is now hardly a civilised country which does not possess a central bank.

Necessity of central banks.

Constitution of Central Banks : The constitution of central banks varies so much in important matters that it is difficult to speak of a single type as a standard. There are central banks which are owned and managed by the state. On the other hand, there are banks which are owned by private shareholders, or by commercial banks as in the U.S.A. Most of the central banks started since the first war have been shareholder's banks, as it was then the fashion to stress the independence of the central bank from Government control. But in recent times, the strain of the trade depression, the necessities of rearmament expenditure, and the spread of socialistic ideas,—all have combined to increase the influence of the Government over the management of Central Banks. There is no Central Bank which is entirely free from the control of the Government. This will be evident if we study the composition of the Board of Directors and of the Governors of the more important Banks. The Governor of the Board of Directors and his Deputy, in whose hands effective power is concentrated, are often appointed by the Government. Or, their appointment is made subject to the approval of the Government. In the U.S.A., all the seven members of the Board of Governors are appointed by the President. In France, the Governor and his Deputies are in effect appointed by the Government. In England, the

The State and Central Banks.

Governor, the Deputy Governor and all Directors are now appointed by the Government.

The appointment to the Board of Directors is also made in various ways. In America and England, all the Directors of the Board are appointed by the Government. Member banks of the U.S.A. have only the right to elect some Directors in the twelve Reserve Banks. In some countries, the majority of Directors are appointed by shareholders. Sometimes, rules have been laid down that all or some of the Directors should be chosen from the representatives of commercial or agricultural or other interests. In addition, it is the usual practice to lay down that the Secretary to the Treasury or a high Government official of the Finance Department shall be an *ex-officio Director* keeping watch over the affairs of the Bank in the interests of the Government.

The Government also retains control over other matters. For example, the distribution of profits is regulated by the Government, the state often taking away a share of the profits of the Bank, after paying a fixed or a reasonable dividend to shareholders.

Functions of Central Banks : The main function of a central bank is to act as the governor of the machinery of credit with a view to secure the stability of prices. It regulates the volume of credit and currency, pumping in more money when the market is dry of cash, and pumping out money when there is excess of credit. Its aim is to secure not only the stability of prices, but also the stability of exchanges, so far as these two aims are compatible with each other. It aims at controlling both the short-period or cyclical fluctuations and the long-period movements of the price-level.

In order to perform this objective with efficiency, the central bank must be entrusted with other functions. These are best stated in the words of the Governor of the Bank of England. "It should have the sole right of note-issue. It should be the channel and the sole channel, for the output and intake of legal tender currency. It should be the holder of all Government balances ; the holder of all reserves of the other

(a) To secure stability of price.

banks and branches of banks in the country. It should be the agent, so to speak, through which the financial operations at home and abroad of the Government would be performed. It would further be the duty of a central bank to effect, so far as it could, suitable contraction and suitable expansion, in addition to aiming generally at stability and to maintain that stability within as well as without. When necessary it would be the ultimate source from which emergency credit might be obtained in the form of rediscounting of approved bills, or advances on approved short term securities or Government paper."[1]

(b) Management of note-issue.

In the *first* place, therefore, the central bank should possess the monopoly of note-issue in order to secure control over currency. We have seen that the aggregate loans of banks bear some fixed relation to their cash reserves. Cash reserves consist entirely of notes and subsidiary coins, of which the latter are a minor element. Hence to secure control over the volume of credit, it must possess the right of note-issue. In addition, subsidiary coins are issued through the agency of the central bank.

(c) To act as a banker's bank.

Secondly, the central bank generally acts as the banker's bank. All other banks of the country keep, either by law or by custom, a certain amount of their balances with the central bank. In the U.S.A., member banks are required by law to keep a certain percentage,—varying from 13 to 3 per cent—of their total liabilities on deposit with the Reserve Banks. In England, joint-stock banks keep their balances with the Bank of England as a matter of custom and convenience. Under the Reserve Bank Act of 1934, scheduled banks in India are required to keep a proportion (from 5 to 2 per cent) of their deposit liabilities with the Reserve Bank. It is the ultimate holder of the reserves of the banking system, and any bank can draw upon this pool to tide over temporary needs and difficulties by rediscounting first class bills.

[1] *Evidence before the Royal Commission on Indian Currency and Finance, 1926.*

Thirdly, the central bank is also the banker of the Government. Through taxation and expenditure, the Government receives and disburses an enormous sum of money, which, if unco-ordinated, might cause unnecessary disturbance to the money market. Hence the financial operations of the Government should be carried through the central banks, which regulate the receipts and payments in such a way as not to disturb the money market. It, therefore, manages the Government accounts and the public debts; and has the custody of the funds of the Government free of interest.

(*d*) Government banker.

Fourthly, when the country is on the gold standard, the management of that standard with a view to securing the stability of exchange rates is left to the central bank. For this purpose, the central bank is generally placed under a statutory obligation to buy and sell gold at fixed prices. In some countries, it is also empowered to sell gold or at its option, foreign exchange on a gold standard country. Another important function of the central bank in this connection is to assimilate the gold movements. When gold is imported, it either initiates an expansion of credit, or sterilises gold imports by selling securities in the market. And *vice versa* when gold is exported.

(*e*) Management of the gold standard.

Fifthly, the central bank is the ultimate lender of last resort. By rediscounting first class bills, or by taking advances on approved short-term securities from the central bank, other banks can increase their cash resources at the shortest possible notice. This makes their position more liquid. Whenever a crisis or a panic develops into a run on banks, this facility of turning their good assets into cash at a moment's notice is of great advantage to them. It is, therefore, the ultimate source from which emergency credit is obtained by the market to meet the temporary needs for additional credit or demands for cash on the part of a panic-stricken people.

Lastly, the central bank also performs certain other minor functions. For example, it acts as the clearing house for the settlement of drafts and cheques of commercial banks.

Methods of credit control : The central bank controls the volume of credit in three ways,—by raising or lowering the Bank Rate, by engaging in open market operations, and by varying the reserve ratios of member banks. We shall describe the *modus operandi* of each policy one by one.

Influence of bank rate : Bank Rate is the minimum rate at which the central bank will discount first class bills of exchange, or will advance loans against approved securities. In some countries, it is known as the discount rate.

Let us assume that, for any reason, a country's balance of trade has become adverse. Such an adverse balance would cause an export of gold from that country. As the reserves of the central bank are thus depleted, it will put up the Bank rate. What will be the consequences of a higher bank rate?

The effect on foreign exchanges. The immediate effect will be on the foreign exchanges. Since the bank rate is higher, it means that the people, especially foreigners, can obtain a higher rate of interest in that country than elsewhere. So they will not withdraw any money that they are entitled to withdraw from that country, or the proceeds of any bill they have discounted. Foreigners who have money to invest for short-periods will send it to that country. On the whole, there will be a movement of funds into, or a stoppage of funds going out of that country. The demand of foreigners for the currency of that country will increase, and hence its value rises in terms of foreign currencies. That is, exchange rates will become favourable, and gold may even be imported into the country. Further, as a result of the higher bank rate, there will be less borrowing, and the purchasing power within the country will decrease. Some portion of this decreased purchasing power that would have been spent on the purchase of imported goods would no longer be so spent, and so the volume of imports will decline. The balance of trade will, therefore, tend to become favourable.

Effect on prices and costs. Because of the higher cost of borrowing, businessmen who are on the margin of doubt whether it is profitable to invest money in business at the old rate of interest will be deterred from borrowing when the rate is higher. Moreover, people who borrow money

repayable over a long period for constructing factories, docks, buildings, etc., will curtail their activities because of the higher rate of interest. The production of investment goods will, therefore, be slowed down, and unemployment will occur in the constructional industries. As the spending power of the unemployed is decreased, prices will tend to fall. Meanwhile, traders and dealers, who are in the habit of keeping stocks of goods with borrowed money, will try to reduce their stocks now that the cost of borrowing is high and there is an expectation of falling prices. They will also curtail their orders for goods to producers. The latter, faced with reduced orders, will not at first shut down their factories; for once closed down, it might be difficult to start again when business would revive. They will, first of all, quote lower prices to the dealers. The wholesale price-level will, therefore, fall. But the costs of producers including wages have not fallen and they will be undergoing losses. As they cannot go on in this way for a long time, they will be forced to curtail their productive activities, and a state of general unemployment will ensure. Finally, as a result of the pressure of the growing unemployment, rates of earnings will fall. Costs will, therefore, fall until it becomes profitable again to sell at the lower prices. Thus the effect of a higher bank rate is first, to attract a volume of short-term funds into the country, to make the rates of exchange and the balance of trade favourable: if it continues for a longer time, the production of investment goods will decrease, wholesale prices will fall, unemployment will ensue and finally, costs and money incomes will be lowered. The opposite happens when the bank rate is lowered.

Open market operations : The term 'open market policy' is used to signify those transactions in which the central bank sells or purchases securities on its own initiative to control the volume of credit in the country. If, at any time, the reserves of joint-stock banks are ample and they are pursuing a policy of easy money which the central bank deems unwise, it will sell government securities in the market. Buyers of these securities pay the central bank by giving cheques on other banks. These cheques, when cashed,

Modus operandi of the open market policy.

will diminish the reserves of these banks, and they will then be forced to curtail their lending. Their money rates of lending will move up and the volume of credit in the country will be decreased. Similarly, when the central bank finds that money rates are unusually high and there is a dearth of funds in the market, it will purchase securities, and pay the sellers by giving away its notes. These will be deposited by sellers with their banks. Reserves of the latter will, therefore, increase, and they will lower their rates of lending. In this way, by selling or purchasing securities in the market, the central bank can change the reserves of other banks, and influence their money rates of lending and the volume of credit.

Open market policy in England.

The influence of open market operations on the money market is not the same in all countries. In England, open market operations have been most successfully carried out. It is a convention of the London money market that other joint-stock banks should not borrow directly from the Bank of England either by rediscounting bills, or by taking advances against securities. So when the Bank sells securities in the market, reserves of banks are diminished, and they do not replenish their cash reserves by borrowing from the Bank of England. They cease to give loans, or call in their loans to bill-brokers, their second line of defence. In the federal reserve system, it is the usual practice for member banks to borrow from the Reserve Banks by re-discounting their bills. So when the Federal Reserve Board sells securities in the market and carries off a part of the reserves of member banks, the latter may take some bills to the Reserve Banks and by re-discounting them, replenish their reserves. There would then be no contraction of credit and the open market policy might become ineffective. In recent times, however, a convention has been established against large and continuous borrowing from the Reserve Banks. Moreover, a limit has been fixed up to which each member bank will be allowed to borrow from the Reserve Bank. When the Federal Reserve Board sells securities in the market, member banks will not at once re-discount them if they have already borrowed up

Open market policy in the U.S.A.

to the limit assigned to them. They will call in loans, and restrict their purchases of bills, and as a result money rates go up. Similarly, when securities are purchased and the sale-proceeds are deposited with member banks, and by them to the Reserve Banks to pay off their debts, this process will reduce their indebtedness to the Reserve Bank and lead them to adopt a somewhat more liberal credit policy. Money rates then become lower. The efficacy of the open market policy has thus increased in recent times under the Federal Reserve System, though it is not as perfect as in England, On the continent, this policy has not been much used. The Bank of France has been recently allowed to engage in open market operations, while the Reichsbank's power to deal in government securities was enlarged just before the last war.

Thus open market operations are an effective instrument in the hands of a central bank for exercising a stabilising influence in the money market. When there is a great demand for funds, for example, before the Christmas and the market rates of lending tend to go high, the central bank can come to the rescue of the money market and pour funds into it by purchasing securities. Moreover, by purchasing or selling securities, the central bank can "sterilise" or "offset" movements of gold. When gold is imported into the country, the reserves of banks are increased thereby, and they may embark on a policy of credit expansion. The central bank, if it does not like an expansion of credit, will sell securities in the market and thus wipe off the surplus reserves of banks and prevent them from expanding their loans. This is called 'sterilising' gold imports. Conversely, when gold has been exported and as a result, the reserves of banks are lower, they may pursue a policy of credit restriction. The central bank, if it desires to prevent contraction, will purchase securities in the market. The reserves of member banks will increase and they will cease to contract their loans. This is called "offsetting" of gold. *Lastly,* in emergencies and in crisis, when the demand for funds on the part of the panic-stricken people vastly increases, and there is a run on banks, the central bank can come to their rescue not only by rediscounting their bills, but by liberally purchasing securities and supplying the market with additional funds. This was

one of the main ways in which the Federal Reserve System tried to meet the banking crisis of 1931-32.

Relation between bank rate and open market policy : It is obvious that the use of the bank rate and of open market operations cannot be separated from each other. Each, by itself, may not be as effective as is desirable. For example, a high bank rate may not always result in a contraction of credit. Other joint-stock banks may be in possession of surplus funds which they would go on lending at low rates, even if the bank rate is put up. The bank rate thus becomes ineffective. Under such circumstances, the central bank will sell some securities in the market and absorb the surplus funds of banks. The latter will then be forced to follow the lead of the central bank and curtail their loans. Similarly, the open market policy, if it is not followed up by appropriate changes in the bank rate, may not always be effective. Let us suppose that, in order to control credit, the central bank sells securities, but has not raised its rate of discount. Member banks may then replenish their reserves by rediscounting these securities with the central bank, since the bank rate is low. The policy of credit restriction will be unsuccessful. But if the bank rate is also simultaneously put up, other banks will find it unprofitable to rediscount securities. They would call in their loans. Hence each of the two weapons may not always be successful if it is not backed up by the other.

Bank rate policy and open market policy.

Open market operations are now-a-days used to prepare the market for changes in the bank rate as well as to make the bank rate more effective. Before the bank rate is raised finally, securities are sold in the market to prepare the ground beforehand so that the market may be forced to follow the lead of the central bank. Similarly, when the bank rate becomes ineffective, open market operations are resorted to, to make it effective. Now-a-days it is being increasingly felt that to correct any temporary maladjustment in the money market, the use of the bank rate policy is unwise. The influence of changes in the bank rate is far-reaching, and it should, therefore, be used only to cure any permanent disequilibrium in the economic life of the

country. Consequently, the policy of purchase or sale of securities is finding increasing favour with the central banking authorities as a method of control.

Variation of bank reserve ratios : Writing in the *Treatise on Money,* Lord Keynes suggested arming central banks with another weapon of control, *viz.,* changing the reserve-ratios of member banks. Central banks might not find it always possible to engage in open market operations. There may be a shortage of securities which central banks might buy or sell. Moreover, it will not always be profitable for central banks to purchase securities at higher prices, and to sell securities at lower prices. So it may sometimes be convenient if the central bank is empowered to ask member banks to keep a higher or lower percentage of reserves against their deposits. In India, for example, scheduled banks are required by law to keep 5 per cent of their deposits with the Reserve Bank. If the Reserve Bank finds at any time that these banks are in possession of surplus funds on the basis of which they are going to expand their loans,—a course which the Reserve Bank considers undesirable, it should be authorised to call upon scheduled banks to keep (say) 7 per cent reserves against their deposits. A large part of their surplus funds will then be immobilised and they may be unable to create more deposits. Under the Banking Act of 1935, the Board of Governors of the Federal Reserve System of the U.S.A. has been authorised to increase the reserve ratios of member banks upto certain limits. On several occasions since 1936 the Board increased or lowered the reserve ratios of member banks in order to control large-scale changes in the volume of credit. In 1936, the Reserve Bank of New Zealand was also authorised to alter the reserve ratios of trading banks. Such provisions are also to be found in the case of the Bank of Mexico, Belgium, etc.

Rationing of credit : By means of the above three policies, the central bank can control the total volume of credit outstanding in the market. But it cannot control the uses to which credit may be put. By rationing credit it may discourage the grant of loans to stock exchanges by refusing to rediscount the papers of a bank which has extended liberal loans to speculators. Under the Securities Exchange Act of

1934, the Board of Governors of the Federal Reserve System has been given the power to prescribe margin requirements for the purpose of preventing an excessive use of credit for stock exchange speculation. This policy, however, is not very much used by the central banks.

Moral persuasion.

In addition, central banks often exert much indirect influence over the loan policy of member banks by what is called "moral persuasion." There is generally much close co-operation between the central bank and member banks, and the former may persuade the latter to follow its lead.

How far is the bank rate effective?

Limits of control : So long we have discussed the methods by which the central bank can control the money market. Each of these methods is subject to serious limitations. Changes in the bank rate will not always act in the way desired. The central bank controls the bank rate. If changes in the bank rate are not followed by similar changes in the other rates prevailing in the market, these will not be followed by changes in the volumes of bank loans. There is often no proper co-ordination between different money rates prevailing in the money market. According to the convention of the London money market, it is the usual practice of English banks to charge rates which are usually 2 per cent above bank rate with a minimum of 5 per cent. So when the bank rate is raised rates charged by the banks will also rise. But a lowering of the bank rate below 3 per cent, will not lead to any further fall in other rates. The central bank can thus force an increase in money rates, but its power to force a fall in such rates is severely limited. This means that the central bank may be able to check an inflationary movement, but it will not be able to control deflation by causing a fall in money rates, provided of course that the volume of bank loans is responsive to changes in the rates of interest. This, however, does not happen on many occasions. A change in the rates of interest affects the cost of borrowing to businessmen. But the cost of borrowing forms, on many occasions, only a small part of the total cost of a businessman who is more concerned with the prospective rates of profits to be earned in his business. If he expects that prices are rising,

he will not be deterred from borrowing by the fact of a rise in the cost of borrowing. A fall in the bank rate may not induce a businessman to borrow if prospects of profits are otherwise gloomy. This is especially true during a period of acute depression when prospects of profit give place to the fear of losses. At such times no positive rate of interest will lure businessmen to borrow.

Limitations of open market policy.

The policy of open market operations has also serious limitations. We have seen that in England, purchase or sale of securities by the Bank of England will cause an expansion or contraction of bank reserves. But things may not happen in the same way in the U.S.A., where, unlike in England, the banks may borrow from the Federal Reserve Banks. When a Federal Reserve Bank sells securities in the market to absorb any surplus cash reserves of banks, the latter may easily replenish their reserves by borrowing from the Federal Reserve Banks. In case of purchase of securities by the Banks, the member banks will no doubt receive extra cash. But they may utilise the cash to repay their debts to the Federal Reserve Bank. Under the circumstances their reserves will not increase. Moreover, when the Federal Rserve Banks are trying to increase the cash resources of banks by purchasing securities, the public may withdraw cash from banks in panic, with a view to hoarding. In that case, the reserves of banks may not increase. This happened in the U.S.A. in 1932 when the Federal Reserve Board's attempts to increase the cash resources of banks were neutralised to some extent by large withdrawals of currency made by the public in fear of an epidemic of bank failures. Even if the central bank succeeds in increasing the cash reserves of banks, that does not mean that their loans will also increase. In the first place, banks may simply pile up more cash reserves to strengthen their position in the face of an emergency. In that case there will be no increase in loans. Secondly, even if banks are willing to lend, businessmen may be unwilling to take loans. Banks may place plenty of water before the public horse, but the horse cannot be forced to drink if it is afraid of loss through drinking water. This may happen when confidence is lacking in the acute phase of

a depression. During such a period, an expansion of bank loans and investment will not be easy of achievement. But unfortunately the burden of depression cannot be lifted unless there is such an expansion. Thus we arrive at the same conclusion as before. The central bank cannot cure a depression.

The same conclusion is reached if we analyse the implications of the policy of variation of reserve ratios. If banks possess excess cash resources, the central bank may, by increasing the reserve ratios, neutralise the excess reserves, and force banks from pursuing a policy of easy lending. But when the reserves are low, the central bank may seek to remedy the situation by lowering the ratios. But this may not lead to an increase in the volume of loans if businessmen are otherwise, nervous or pessimistic about the future.

There is, of course, much truth in this contention. But it has been argued that periods of acute depression are usually reactions from previous periods of excessive booms. As the debauchery, so the headache. If the central bank can control booms in the early stages, it can prevent the emergence of a deep depression. "The fact that a motor car is not well adapted for getting itself out of a ditch once it has fallen does not prove that it is beyond the powers of good driving to keep it in the middle of the road".[3] But can the central bank take steps in sufficiently early stages? It may be admitted that if corrective means are taken at the early stage, they may be successful. But that may not always be possible. Adequate statistics showing changes in the economic situation take time to be collected, and measures adopted by the central bank also take time to become effective. So by the time statistics are collected, properly interpreted and the measures become effective, the disease may become deep-seated. Economic diagnosis is not always an easy task. A tendency towards a fall in prices may not mean the onset of a depression. It may simply indicate an increase in productive efficiency. So if the central bank takes steps to check such a fall in prices, it may actually promote a boom as happened in the U.S.A. between 1924-29.

[3] *Report of the Macmillan Committee*, P. 95.

Other methods of control.

Hence many economists are suggesting the adoption of other methods. Much can be gained if there is more co-operation between the central bank and other banks. If the latter follow the lead given by the former, some of the problems of credit control will disappear. Occasions may arise when it may be necessary to exercise some sort of qualitative control over bank loans. The central banks in some countries have been empowered to discriminate against banks which have advanced a large portion of their resources as loans for speculative purpose. Others have gone in for a bolder policy, and have suggested that since changes in the volume of investment are the prime cause of changes in the economic system, the state should assume direct control over the volume of investment.

APPENDIX TO CHAPTER XXXV

A NOTE ON THE EFFECT OF BANK RATE CHANGES

There are at least two different views regarding the way in which changes in the bank rate influence prices and production. The first view, upheld by Mr. Hawtrey, would focus attention on the behaviour of dealers in holding stocks of finished and semi-finished goods in response to changes in short-term rates of interest. The second line of thought has been propounded by Lord Keynes. According to him, it is the changes in the volume of fixed capital or investment goods, following a change in long term rates of interest, which form the basic element in the whole causation.

According to Mr. Hawtrey, the central fact in the whole situation is the willingness of "dealers" to hold stocks of working and liquid capital goods, *i.e.*, semi-finished goods. Now the holding of these goods can be, and is usually financed by means of short-term loans. Movements in short-term rates of interest, by causing appropriate changes in the holding of goods are sufficient to explain any change in prices and production. If short-term rates of interest rise, the cost of borrowing and of holding stocks of goods with loans increases. Dealers, therefore, try to reduce their stocks; and they will send less orders to producers for goods. Producers find that sales are falling off. The latter, in their turn, may cut prices with the intention of inducing dealers to buy more; or they will curtail output. How far they will lower prices or curtail output will depend on the shape of their cost-curves. As the output is curtailed, some of the factors of production become unemployed. Money incomes, therefore, contract, either because the number of persons earning money incomes decline, or the rates of remuneration go down. This leads, again, to a decline in retail sales of goods. Dealers, finding sales falling off, reduce their orders to producers, and so forth. Faced with depleted orders, producers cease to enlarge their stocks of fixed capital goods. So the

market for investment goods becomes depressed. In this way, prices and production register a decline.

According to Lord Keynes, the economic situation is affected, not through changes in short-term rates of interest and in the stocks of working capital goods, but through changes in long-term rates of interest and the volume of fixed capital goods. The demand for working capital is not so sensitive to changes in short-term rates; it is the result of the general situation, which is itself determined by the demand of entrepreneurs for fixed capital goods. So he fixes attention upon long-term rates. Now when the bank rate changes, long-term rates of interest will also change in the same direction for the following reasons. When short-term rates rise, while long-term rates remain stable, short-term securities become relatively more attractive to investors and bankers. Such persons will transfer their funds to the short-term market by selling long-term securities. This will cause the prices of the latter to fall. That means a rise in long-term rates. Moreover, fearing a further rise in interest rates, investors may begin to sell long-term securities whose capital value is likely to fall very much and to buy short-term assets whose capital value cannot fall so much as they will be repaid at par within a short-time. The result will be a rise in long-term rates of interest.

Changes in long-term rates will affect the investment market. The volume of investment in fixed capital goods depends on the prospective profits to be earned from such goods and on long-term rates of interest. The rate of profits remaining the same, the higher the long-term rate of interest, the less attractive becomes any form of new investment or replacement of existing capital. As a result, entrepreneurs will spend less on fixed capital goods. Employment in the capital goods trades declines, and total money incomes shrink. Expenditure on current consumption will decrease. Employment in the consumption goods trades will then decline. Prices and production will fall all-round. The opposite process will follow from a fall in the interest rates.

It should be noted that it is not possible for us to verify any of these views by a reference to facts. The efficacy of both these lines of thought depends on the behaviour or the

response of entrepreneurs in different economic situations, about which we have very little knowledge. Moreover, the states of trade and prices are not so responsive to changes in interest rates, as is assumed in both the theories. Interest is only one of the factors which govern the volume of new investment, either in working or fixed capital goods. Lastly, it should be remembered that the two explanations are not mutually exclusive. A change in the bank rate may lead to a change in the holding of stocks as well as in the volume of fixed capital goods. The difference in both the views is mainly one of emphasis.

CHAPTER XXXVI

SOME CENTRAL BANKS

Bank of England : Established in 1694, the constitution of the Bank of England was governed by the Bank Charter Act of 1814. Before 1946, its position was unique among central banks, as it was a purely shareholders' bank, managed by a Court of Directors entirely chosen by shareholders. When the Labour government came to power in 1945, the first important measure that it undertook was to pass an Act to "nationalise" the Bank of England. Under that Act, the Bank has been nationalised, and shareholders have been paid Government stocks bearing interest at 3 per cent redeemable at par on or after 5th April, 1966. As the Bank was paying dividend at the rate of 12 per cent shareholders have been paid stocks of the value of £400 for every share of £100 held by them. The Governor and the Directors are now appointed by the government for five-year term and four-year terms respectively. The Bank is divided into two departments—the Issue Department and the Banking Department. The function of the Issue Department is to issue notes according to the fixed fiduciary system. Originally, notes to the value of £14 m. could be issued by the Bank without any gold backing, and any notes issued in excess of this amount were to be covered by gold to the extent of 100 per cent. Further it was provided that if any bank which possessed the right of note-issue at that time ceased or was debarred from issuing notes, the Bank of England might increase its fiduciary portion by two-thirds of the amounts thus withdrawn. By virtue of this provision, the fiduciary issue was raised to £19,750,000 in 1932. By the Currency Act of 1928, the fiduciary issue was raised to £260,000,000. It was further provided that the fiduciary portion can be raised with the permission of the Treasury and it was raised to £275,000,000 in 1931. Formerly, the Bank was prohibited from issuing notes below £5, but under the Act of 1928, the issue of £1

and 10*s*. notes was allowed. Profits on the issue of notes, after deducting the expenses, are paid to the Treasury.

The Banking Department conducts all the banking activities, holds the balances of the government, other banks and the public, keeps the ultimate reserve of the country, fixes the bank rate and is required to publish a weekly return. The business of the Bank is conducted by the Court of Directors' composed of the Governor, Deputy Governor and 26 other members appointed by the government, subject to directions given by the government. The Governor and the Deputy Governor hold office for five years and are re-eligible for appointment. The last Governor, Lord Montague Norman, held office for 17 years. It is an unwritten rule that no member of any bank, except the private or merchant banking houses, is eligible for directorship. The Court meets every Thursday, fixes the bank rate, *i.e.*, the minimum rate at which the Bank will discount first class bills, and the weekly return. The Bank has eight provincial branches.

Bank return : The weekly bank return, published on every Thursday, is an important guide to the state of the money market. It is said to be the "barometer" of the London money market.

ISSUE DEPARTMENT

Notes issued		Government Debt	£11,015,100
In circulation ...	1382,760,161	Other government securities ...	1438,261,722
In Banking Department	67,487,672	Other securities ...	712,021
		Silver coin ...	11,157
		Amount of fiduciary issue ...	1450,000,000
		Gold coin & bullion	247,833
	1450,247,833		1450,247,833

BANKING DEPARTMENT

Proprietor's capital ...	£14,553,000	Government securities	£312,424,705
Rest	3,951,121	Other securities	
Public deposits ...	9,607,090	Discount and advances	12,383,550
		Securities ...	17,729,362
Other deposits Bankers	290,629,949		
Other Accounts ...	93,644,389		30,112,912
		Notes	67,487,672
	384,274,538	Gold and silver coin ...	2,360,460
	312,385,749		412,385,749

The main function of the Issue Department is to issue notes. The item on the left side shows the total amount of notes issued by the Department. "Notes in circulation" are those notes which are either in the hands of the public, or in the vaults of banks as their cash reserves. Notes in the Banking Department are the cash reserves of that Department and appear at the end of the balance sheet of that Department on the right side. Against these liabilities, Bank holds the assets on the right side. The amount shown as "Government debt" is an old debt, contracted by the Government of William III when the Bank was originally started, by lending its whole capital to the government. The next item, "Other Government Securities" consists mainly of Treasury bills, and of any other government security which the Bank chooses to hold. The next item, "Other securities" consists of domestic and foreign bills. Since the war a certain amount of silver has been accumulated with the Bank. The amount of silver is diminishing as it is being used up in minting subsidiary coins. All these make up the fiduciary issue which stood at the high figure of £1,450,000,000. This increase is due to that fact that since the war, all gold coins have been withdrawn from circulation, and the Bank has met the void by issuing £1 and 10*s*. notes.

In the Banking Department, the first item on the side of liabilities is "Proprietor's Capital",—the subscribed share capital of a Bank, which is now held by the government. The "Rest" is undivided profit and it is never allowed to fall below £3,000,000. Next is "Public Deposits." It includes the balances held to the account of various government departments. "Bankers Deposit" includes the balances of joint stock banks. Fluctuations in this item show the amount of the reserves of commercial banks. It is thus an important index to the state of the money market,—whether banks are suffering from a paucity or surplus of funds or not. The "other Deposits" include the deposits of foreign central banks, acceptance houses and discount houses, Indian and Colonial governments, etc.

On the side of assets, the first item "Government securities" includes the Treasury bills and any "Ways and Means Advances" made to the government and the secu-

rities which the Bank buys on its own initiative. "Discounts" include bills which bill-brokers take to the Bank for discounting. "Advances" mean the loans made against first class securities either to bill-brokers or to the regular customers of the Bank. The interest charged on advances by the Bank is one half per cent. above Bank Rate. These two items mount up when the money market is short of cash, and bill-brokers are "squeezed" and then go to the Bank for temporary loans. The item "securities" includes bills which the Bank buys on its own initiative, and the loans of Indian, colonial and other governments. "Notes" are the till-money of the Bank, and together with "gold and silver coin," they constitute what is called the reserve of the Bank. The percentage which this bears to the total Deposits,—Public and other Deposits, is called the "Proportion," and shows the strength of the Bank's position. When the proportion is high, we should expect the bank rate to fall ; when it is low, the bank rate is expected to go up.

The control of the Bank of England over the money market is exercised by means of the bank rate and the open market operations. The bank rate is the minimum rate at which it will discount first class bills of exchange. It is published every Thursday after a meeting of the Court of Directors. The only break with tradition was on the 19th September, 1931, when the bank rate was raised on Saturday, following the suspension of the gold standard. But though the bank rate is the minimum rate, the Bank may discount for its favoured customers at a lower rate, or it may ask a higher rate to discourage rediscounting. In addition to the bank rate, there is another rate, called the "Lombard Rate" for loans on stock exchange securities and other collaterals ranging from 7 days to three months, and this rate is generally higher than the bank rate by one half per cent. The bank rate is uniformly above the market rate of discount, so that usually no rediscounting is done by the market at the Bank. It is only when bill-brokers are "squeezed", *i.e.*, asked to pay off the call loans by joint-stock banks, that they borrow from the Bank.

(B) **Federal Reserve System :** The Federal Reserve System is a unique central organization in many respects.

It is the only decentralised system, consisting of not one central bank, but of twelve banks supervised by a single organization. It is the fruit of years of study of the banking institutions of the important countries of the world. It embodies, therefore, the results of recent experiences of central banking.

To understand the origin of the Federal Reserve System, it is necessary to have an idea of the banking conditions in the U.S.A. before 1913. Banks were organized under a great variety of laws,—state and federal,—and there was no co-ordination, no team-work among them. There was no organized agency for meeting the demands for emergency currency. Each bank was supposed to keep ample reserves; but most of them were unavailable during periods of stress. Above all, the currency system was absolutely inelastic. Notes could only be issued by national banks after depositing government bonds with the Comptroller of Currency. So the expansion or contraction of notes did not take place in response to trade demands, but in response to variations in the prices of government debts. There were, therefore, frequent panics in the banking system, the most notable of which was the crisis of 1907-8. It was to remedy such a state of affairs that the Federal Reserve System was organized in 1913. The functions of the System were stated in the preamble to be "to furnish an elastic currency, to afford means of rediscounting commercial paper, to establish a more effective supervision of banking in the U.S.A., and for other purposes."

The Federal Reserve System consisted of twelve Reserve Banks and the Federal Reserve Board. The whole of the United States has been divided into twelve districts,[1] each district containing one Reserve Bank. Each Reserve Bank is formed by the banks in the district, which are known as "member-banks". National banks i.e., banks organized under the federal laws, must become member-banks, and state banks and trusts, etc., are permitted to join, provided

[1] *viz.*, Boston, New York, Philadelphia, Cleveland, Richmond, Atlanta, Chicago, St. Louis, Minneapolis, Kansas city, Dallas and San Francisco. New York and Chicago are central reserve cities. The ten others are reserve cities.

they fulfil the requirements of the Federal Reserve Act. Each member-bank contributed six per cent. of its paid-up capital and reserve to provide the capital of the Reserve Banks. Member-banks number about 9,000. Each Bank has 9 Directors, of whom three were appointed by the Federal Reserve Board,—one of them being the Chairman of the Board of Directors, and six were elected by member-banks. Of the last six, three must be actively engaged in commerce, agriculture or industry.

In addition to subscription to the stocks of the Reserve Bank, each member-bank must keep 13 per cent. of its demand deposits and 3 per cent. of its time deposits (if it is situated in central reserve cities), 10 per cent. of its demand deposits and 3 per cent. of its time deposits (in reserve cities), and 7 per cent. of its demand deposits and 3 per cent. of its time deposits (if it is a country bank), on deposit with its Reserve Bank. The Federal Reserve Board is empowered to suspend these reserve requirements in cases of emergency for a certain period, provided it levies a graduated tax upon the amount by which actual reserves fall short of the legal reserves. Each Federal Reserve Bank was required to keep a reserve of 35 per cent. in gold or lawful money against its deposits.

The Federal Reserve Banks can issue two kinds of notes,—the Federal Reserve Bank notes and Federal Reserve notes. The Federal Reserve Banks deposit government securities with the Treasury and can then issue Federal Reserve Bank notes to an amount equal to the par value of the securities. These notes were issued to replace the national bank notes.[2] In addition, the Reserve Banks can issue Federal Reserve notes against which they are required to keep a reserve of 40 per cent. in gold. The reserve may fall below this ratio with the permission of the Federal Reserve Board, provided a graduated tax is paid on the deficit.

The Federal Reserve Board was the controlling and supervising body of the system. It consisted of 8 persons, two of whom are the Secretary of the Treasury, and the

[2] In March, 1933, the power to issue Federal Reserve Bank note was increased to cope with the crisis.

Comptroller of Currency, *ex-officio,* and the other six were appointed by the President for ten years with the consent of the Senate. The Board exercises general supervision over the whole system, can examine the accounts of every Reserve Bank and member-bank, may suspend the operations of any Reserve Bank, can review and determine the rate of discount of each Reserve Bank, can regulate open market operations of the system, and has power to suspend every reserve requirement of the Act, if deemed necessary. The Board was advised by a Federal Advisory Council, composed of twelve members one for each Reserve Bank, in respect of discount rates, notes, issues, etc.

This was the constitution under the Federal Reserve Act of 1913. The Banking Act of 1935 has introduced some changes in the organization of the Federal Reserve System. The old Federal Reserve Board is henceforth to be known as the Board of Governors of the Federal Reserve System, the titles of Governor and Vice-Governor being changed to Chairman and Vice-Chairman, to be appointed by the President of the U.S.A. for four-years terms. The new Board of Governors would consist of nine members, appointed by the President with senatorial approval, for a term of 14 years. The Secretary of the Treasury and the Comptroller of Currency would no longer be the members of the Board. The Act also provides for the appointment of an Open Market Committee, consisting of seven members of the Board of Governors, and five representatives of the Federal Reserve Banks to be selected by the latter. This Committee will henceforth manage open market operations.

The Act provides for the appointment of a President and a Vice-President of each bank to serve as its chief executive officers for five-years terms, the appointments being subject to the approval of the Board of Governors of the Federal Reserve Board. The authority of the Board over the Federal Reserve Banks has thus considerably increased.

The Federal Reserves notes can be issued with 40 per cent. backing of gold certificates. This percentage has now been reduced to 25 by an Act of the Congress passed in June, 1945. The Board of Governors is also empowered to vary the statutory reserve requirements of member-banks,

provided they are not revised downwards, or are not more than doubled. The Reserve Banks are now authorised to give loans against real estates, provided the loans may not exceed 50 per cent. of the value of the real estate, and must mature within 5 years. In any case, the total amount of such loans must not exceed 100 per cent. of the capital and surplus of the Bank, or 60 per cent. of its time and savings deposits, whichever is greater. The Reserve Banks may also give loans on paper otherwise ineligible provided they shall not have a maturity of more than 4 months, and a penalty in the way of interest be added of not less than ½ of one per cent.

All these changes have made for increased centralised control, and greater flexibility.

(C) **The. Bank of France:** Established in 1800 by Napoleon Bonaparte, the Bank of France is one of the simplest of all central banks. The Bank was ostensibly a private institution, its capital being subscribed by private shareholders. In case, as in the case of the Bank of England, the French government also passed an Act for nationalising the Bank of France along with four commercial banks. The management was entrusted to the General Council, composed of the Governor and two Deputy-Governors, appointed by the President of the Republic.

There was a General Council consisting of 20 members; of these, Ministers of Finance, National Economy and Colonies appoint one member each. Six members are appointed by the Minister of Finance from a list of three names submitted by each of six commercial agricultural, industrial and labour organizations. Three members are elected by the National Economic Council, the Central Committee of the savings banks and the staff of the Bank of France. Two members are elected by the General Meeting of the shareholders and the other six are *ex-officio* members holding particular positions in state financial institutions. There are also three censors who are elected by the General Assembly of shareholders, from amongst industrial or commercial shareholders, and who have a consultative voice in the General Council and exercise supervision over all operations of the Bank.

The Bank possesses the monopoly of note-issue. Before 1928 the Bank was not required by law to keep any gold reserve against its note-issue, and the maximum amount of notes that it could issue was fixed by law. But since 1928, the Bank is required to keep a gold reserve of 35 per cent. of the total of its notes and current account deposits. The Bank is also required to buy and sell gold at the rate of 65.5 milligrammes of gold[3] (nine-tenth fine) per franc. In addition to issuing notes, the Bank carries on a large rediscounting business. The bills to be rediscounted must carry three signatures,—one may be dispensed with if adequate security is furnished, and must mature within 90 days. The Bank, unlike the Federal Reserve System, is ready to discount for private individuals. The Bank has a large number of branches situated all over the country.

The Bank's relation with the state has always been very close. It is the banker of the state, and it has helped the state constantly by making large advances to the latter either free of interest or at nominal rates. The Bank habitually keeps large gold reserves and its discount rates are, as a rule, slowly changed. Its control over the money market is not as effective as that of the Bank of England or the Federal Reserve Board. Its ability to control is hampered by the comparatively unorganized nature of the Paris money market, and also by the independent action of the large private banks. Its powers to engage in open market operations have been enlarged in 1938. It cannot fully control the activities of the member-banks.

Like the Bank of England, the Bank of France has been nationalized in 1945, and private shareholders have been paid off by the state on the basis of the market value of their shares.

(D) **The Reserve Bank of India :** The Reserve Bank has been established in India in from— the purpose of taking over the management of the currency from the Government of India. It was a shareholder's Bank, the government retaining some control over the appointment of some

[3] This rate has been revised in recent times.

Directors. The Bank has been nationalized from 1st January, 1949. The Government has taken over the shares from existing shareholders by handing over bonds to the value of Rs. 118-10 per share of Rs. 100/-. The management of the Bank has been entrusted to a Board of Directors consisting of a Governor, two Deputy Governors and 10 Directors nominated by the Central Government. 4 Directors out of 10 has been nominated from each of the four Local Boards. The Directors shall hold office for 4 years and are re-eligible for appointment a second time. For each of the four different areas, there is a Local Board consisting of five members nominated by the central government.

Like the Bank of England, the Reserve Bank has been divided into two Departments, the Issue Department and the Banking Department. The Issue Department has the sole right of note-issue. Notes must be backed by gold and sterling securities to the extent of at least 40 per cent. of which the amount of gold must not fall below Rs. 40 crores, and the rest to be backed by eligible securities and trade bills. The Bank was further authorised to suspend the reserve requirements as to gold and gold securities with the sanction of the Government. The Banking Department is authorised to accept money on deposit without interest, to purchase, sell and rediscount trade bills and bills against government securities maturing within 90 days and bills against agricultural crops maturing within nine months to give loans repayable on demand or maturing within 90 days against eligible securities; to purchase and sell government securities of the United Kingdom and of India; to purchase and sell to scheduled banks, *i.e.*, member-banks, sterling in amount of not less than one lakh of rupees; to do open market operations for the purpose of regulating credit in the interest of trade and industry. The Bank is also the agent of the Central Government and State Governments, and accept deposits from these bodies and conducts all other banking operations including managements of public debts. The Bank also buys or sells other foreign currencies for purposes of maintaining the exchange value of the rupee. The Bank is, however, forbidden to advance money on the mortgage of immovable properties, or engage in trade and

industry. The Bank has also a separate Agricultural Credit Department to study questions of agricultural credit.

The control of the Bank over the loose and unco-ordinated Indian money market is yet an unknown factor. The indigenous bankers, who form the bulk, are not members of the Reserve Banking system. The Bank is yet in its infancy, and a prediction as to its future is premature.

CHAPTER XXXIX

MONEY MARKETS IN VARIOUS COUNTRIES

In a broad sense, the term, "money market", refers to the financial institutions—banks, discount houses, brokers, stock-exchanges, etc.,—which compete with another for borrowing and lending money. For the sake of convenience, it may be divided into five parts. *Firstly,* there is the central bank, the axle-wheel upon which the whole money market revolves. It acts as the guardian of the market, diminishing or expanding the supply of money and credit in the interest of domestic stability. Normally, the central bank does not actively participate in its activities. It merely supplies the appropriate stimulus taking up the thread only when the market is unable to manage itself.

Central bank.

Secondly, there is the "call-loan" market,—"a market for marginal funds, for temporarily unemployed or unemployable funds." As the name implies, here funds are employed for very short periods —mostly for a week and even for a night. Main lenders in this market are commercial banks and other corporations. Banks, as we have stated, employ certain portions of their funds in the call-loan market and count them as their second line of defence. Whenever they want to replenish their reserves they recall those loans. The big corporations usually lend their surplus unemployable funds in this market, (for example, the dividends before distribution). The central bank does not usually lend any fund, but in emergencies, it becomes an important source of supply. The borrowers in this market are the bill-brokers and stock-brokers. The borrowing is done mainly by bill-brokers in England, and by stock-exchange speculators in New York. The bill-brokers in England discount or purchase bills and hold them till maturity with funds borrowed from joint-stock banks. The rate at which these funds are borrowed is known as the call rate, and it is generally one per cent. below the bank rate. The rate is highly sensitive, depending on

Call loan market.

the volume of funds lent by banks. The latter are usually willing to renew their call-loans. But there are times, *e.g.*, on the day when half-yearly accounts are closed, Christmas season, etc., when banks would want to strengthen their reserves, and they will ask bill-brokers to pay off the call-loans. Bill-brokers are then said to be "squeezed" for cash, and they are forced to borrow from the Bank of England temporarily because the bank rate being higher than the market rate, borrowing at that rate is usually unprofitable. The market is then said "to go into the Bank."

In New York, call-loans are taken mostly by stock-brokers. When the American speculator buys a stock, he pays only a marginal deposit of (say) 25 per cent. The remaining 75 per cent. is borrowed from the stock-broker, who, in his turn, borrows at call from his bank, by pledging the stock as collateral with the Bank. This call-rate is, therefore, highly sensitive to the wind and weather of speculative sentiment. It is the reflex of the activity of the New York speculators, and at times rises upto soaring heights. While the Bank of England can control the call-rate, the Federal Reserve Board is often powerless to coerce and control the New York call-rate as was shown by the Wall Street speculation of 1929.

Short period loan market.

Thirdly, there is the market for *short-period loans*. Here money is available for longer periods, generally for three months. This is the special field of activity of the commercial banks, which collect the savings of the public, and lend them through discounts and advances. The chief borrowers are the Government, which borrows through Treasury Bills, and the industrial or mercantile clients who borrow by discounting their bills, or on promissory notes, or through advances and overdrafts.

Long period loan market.

Fourthly, there is the market for *long-period loans*. On one side, there is an organization for the supply and investment of new capital, and on the other, an organization for the transfer of old capital. The former is undertaken by a specialised body of promoters, issue houses, or by commercial banks, and the latter is carried on in the stock-exchanges. The function

of the first is to float new shares, securities, bonds, etc., for public subscription. The main borrowers in this market are the government, municipalities and other public bodies, and the industrial undertakings. The shares, securities, etc., are taken up by the members of the public who have saved. The function of stock-exchanges is to help the efficient working of the former by providing a constant market for the transfer of securities.

Lastly, there are specialised bodies, serving a special market, or supplying a special type of credit. To this category belong the Savings Banks, Agricultural Land Mortgage Banks, Building Societies, etc.

In theory at least, the activities in these different markets should be well co-ordinated under the aegis of the central bank. Each of the rates should be in proper relation to the other, rising and falling together. For example, when the central bank is beginning to initiate a policy of easy money, either by lowering the bank-rate, or by the purchase of securities, all other money rates should come down. So in the ideal money market, movements in the bank-rate will generate similar movements in other rates. Any discrepancy between movements in the rates should be capable of being quickly corrected. Let us take the case when the short-term rate is abnormally lower than the long-term rate. Speculators will then borrow 'short' money and invest in long period securities. Banks and other short-term lenders will then place more of their resources in long-term investments. In these various ways, the demand for short-term funds will rise while their supply will fall due to the action of bankers. The short rates will rise. And the prices of long-term securities will fall until the two rates will again reach the same relative position. In actual life, however, such a frictionless money market hardly exists. The discrepancy between short-term and long-term rates, which existed between the inter-war years points out that movements in the different money rates are not always similar. In particular, the call-rate is peculiarly sensitive to the speculative sentiment and may break away from other rates. The co-ordination of different money rates is one of the most important problems of the art of central banking.

CHAPTER XL

THE THEORY OF INCOME AND EMPLOYMENT

Our examination of the basic economic factors is now almost complete. We have examined in detail the concept of the national income, the way in which different factors co-operate to produce that income, and the problem of pricing of the component units of the national income and of the services of the factors of production. Our next task has been to examine the working of the monetary and banking institutions. We are now in a position to study the modern theory of employment. The importance of this part of our study is obvious. The volume of employment and the level of the national income constitute the most important single element in determining whether or not each of us has a job and a decent standard of living. When the volume of employment is low, the national income is small, and a large section of the population must be living in misery; when it is high, most of us have a job and live relatively well. The theory of employment seeks to provide the explanation for the alternate periods of prosperity and depression through which our economic system passes.

Determinants of income and employment : On what factors does the volume of employment depend? A business firm will employ more labour and other factors of production when it expects higher demand for its product or products. When the demand for a product is very high, the firms producing it will try to expand their output, and so employ more factors of production than before. Similarly, when the aggregate demand for all products and services is high, the volume of employment offered to factors will also be high. Now, a high aggregate demand for all goods and services will be the result of a high rate of total spending. If consumers spend more money on the purchase of consumption goods, the demand for such goods will be high, and the firms producing them will provide a large number

of jobs for the factors of production. Or, if business firms and the government spend more money on investment, the demand for investment goods will be high, and more men will be employed in making such goods. Thus the volume of employment depends on the total spending during a given period.

Our next task is to find out the forces which determine the total amount of spending in a community. Why is it that at one time the total spending increases at such a rate as to provide almost overfull employment, while at another time it falls so low that millions become unemployed? To understand that, we must first classify spending. Who spends the money and why? The largest amount of spending is done by ordinary consumers on such things as tooth brushes, shoe, polish, clothes, food, a ride on the bus or theatre tickets etc. These are consumers' goods, and the expenditure on their purchase is consumption expenditure, or simply *consumption*. There is another type of spending, which is directed towards what is called investment goods, *i.e.,* machines, tools, factories etc. This type of expenditure is to be called simply as *investment*. Investment may be made by business firms in which case it is to be called *private investment,* or by the government, when it is to be called *'public investment'*. The goods which we export to foreign countries are called *foreign investment goods*. The total amount of spending is thus equal to the sumtotal of consumption and investment. In order to know what determines total spending, we should analyse the forces which govern spending for consumption and for investment.

Consumption : Expenditure on consumption constitutes the largest part of total spending. The total amount of such expenditure depends upon many factors. But the most important influence is the level of money incomes earned by the individuals. When an individual has higher money incomes, he will usually spend more money on consumption. In other words, the larger the income, the larger will be the expenditure on consumption. Another important fact to be noticed is that although consumption increases when income rises, it generally increases by a smaller amount. When a person's income, rises by Rs. 100/-, he

will usually spend more on consumption; but it is unlikely that he will spend the whole of the additional Rs. 100 on consumption. He will probably spend a part of the increased income on consumption and save the rest. This relation between income and consumption is known as the '*propensity to consume*'. This is equal to

$$\frac{\text{Total consumption}}{\text{Total income}}$$

It is also called the *consumption function,* and we can draw up a curve showing the amounts spent on consumers' goods at different levels of income.

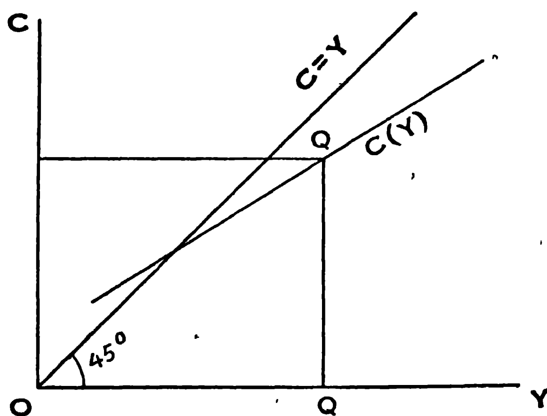


FIG. 37

In this figure, income is measured along the horizontal axis, and consumption along the vertical axis. Let us draw a line from O at 45° to OY. At any point on this line, income will be exactly equal to consumption. In other words, the whole of the income is spent on consumption. The line C(Y) is the consumption-income schedule, measuring the propensity to consume at different levels of income. From any point on this line, we can find out the amount of consumption that would be made at a particular level of income. Take any point Q on the C(Y) curve. It shows that out of an income OQ, QQ amount will be consumed. If we know the national income of a country we can find out,

by means of the propensity to consume curves, the actual amount of consumption that will take place on the basis of that income. Total spending will, therefore, depend upon the propensity to consume and investment. Now total spending must also be equal to the total income. One man's expenditure is another man's income. The expenditure on consumption will be just equal to the incomes earned in the production of consumers' goods, while that on investment is equal to the incomes earned in the making of such goods. Hence total spending on consumption and investment must be equal to total income.

Consumption function : The amount of income possessed by an individual is one of the most important factors in determining how much he is going to spend. The higher the income, the higher will be the expenditure on consumption. The influence of all other factors that determine the expenditure on consumption is grouped together in the expression, the propensity to consume, or the consumption-function. Propensity to consume is the ratio that measures the relation between income and consumption. It indicates how much of the income will be spent on consumption. The propensity to consume is equal to total consumption divided by the total income.

What factors determine the propensity to consume ? In the first place, it depends, to some extent, on the *distribution of income.* The propensity to consume is high in the case of persons with low incomes and low in the case of the rich. If the distribution of income is more equal than at present, the propensity to consume will be high ; the more unequal the distribution, the lower is the propensity to consume. Secondly, it will also depend on the individual's *attitude to thrift.* The psychological attitudes of a miser and of a spendthrift will be quite different. Another determinant is the *expectation of changes in prices.* If consumers expect a rise in prices in future, they will hasten to spend now on a larger scale than before. This is likely to happen most during periods of extreme inflation. *Rates of taxes* are also an important influence on the propensity to consume. Taxes reduce income and so reduce consumption. The exact

amount of reduction will, however, depend on the kind of tax. Taxes like sales tax or excise duties usually fall heavily on the lower income groups and so reduce consumption to a greater extent than the income tax which will probably reduce the saving of the rich than their consumption.

Does the *rate of interest* exercise any influence on the propensity to consume? In the past it was argued that a high rate of interest led to a decline in the propensity to consume. In other words, it led to larger savings. A fall in the rate of interest was supposed to favour consumption. But the effect is not so simple. The influence of the high rate of interest on consumption may also work in the opposite direction. People who want to have a certain income in old age will have to save a smaller amount when the rate of interest is high than when it is low. In short, a change in the rate of interest may raise or lower the propensity to consume. However, ordinary changes of one or two per cent. in the rates of interest are not likely to affect the propensity to consume. The list of factors so far discussed is not intended to be exhaustive. Many other factors like the amount of liquid assets possessed by consumers, expected changes of income etc., exercise some influence on the propensity to consume.

Although the propensity to consume may change, and does occasionally change because of changes in any one of the factors mentioned above; it has on the whole been a relatively stable and constant proportion of the income. There are, of course, exceptions. For example, during the last war, the propensity to consume declined, because many consumers' goods were not available, and many consumers decided to save more out of patriotic motives. Some economists have expressed the opinion that the relation of consumption to income tends to be high in periods of falling incomes, and to be low in years of rising incomes. This may be a fact. Our habits of consumption change slowly. When our incomes fall, we are reluctant at first to cut down our consumption of things and go on till we are forced to do it. When our incomes rise, we begin to adjust our expenditure on consumption slowly, raising our standard of living only by gradual steps.

When income changes, consumption will also change. The ratio of the change in consumption to the change in income is called *the marginal propensity to consume*. It is thus equal to

$$\frac{\text{the change in consumption}}{\text{the change in income}}$$

If the marginal propensity to consume is two-third, it indicates that consumers will spend two-thirds of any increase in their incomes on consumption and save the remainder. It summarises in simple terms the reactions of the consumers to changes in income. The implications of the concept of the marginal propensity to consume in the theory of the multiplier will be discussed in a later section.

Investment : Let us next analyse the factors that determine the volume of investment. As we shall see presently, the volume of investment has been, and is a highly variable element, and this instability is responsible for most of the variations in income and employment and for the alternating periods of booms and depressions. Hence it is of great importance to analyse the causes of variations in investment.

The amount of public investment depends on the policy of the government and of the various local bodies. Let us leave public investment for the time being, and concentrate on the factors determining the amount of private investment. Most private investment is undertaken by business firms, and in deciding whether or not to carry out a particular investment project, a firm usually takes two facts into consideration,—the net yield it expects to obtain from the investment project over its lifetime, and the rate of interest at which it is to borrow funds to finance the project. The estimated net yield or the expected rate of return on an investment project is known as *"the marginal efficiency of capital"*. Private investment thus depends upon the marginal efficiency of capital and the rate of interest. A firm expects to obtain a rate of return equal to 6 per cent from a proposed investment project. If it can borrow funds from the market at 4 per cent to finance the project, then it will be profitable for the firm to borrow and start making the investment goods. Even if it has not to borrow funds for the project, which it

can finance out of its own resources, it will still have to take the current rate of interest into account. If, instead of investing in the project, it lent the funds in the market, it could have obtained a return on its funds at the current rate of interest. A firm that seeks to maximise profits will not invest if the marginal efficiency of capital is less than the current rate of interest. Thus so long as the marginal efficiency of capital is higher than the rate of interest, firms will go on adding to their investment. But as the stock of investment goods increases, the marginal efficiency of capital will decline until it becomes equal to the rate of interest. Other things being equal, the higher the marginal efficiency of capital, the larger will be the volume of investment and *vice versa*. The higher the rate of interest, the smaller will be the volume of investment and *vice versa*. The volume of investment will thus be carried up to the point at which the marginal efficiency of capital becomes equal to the rate of interest. We have then advanced another step in our analysis.

Marginal efficiency of capital : On what does the marginal efficiency of capital depend? Imagine a business man contemplating the installation of a factory for making cotton piecegoods ; what factors would he take into account in estimating the probable net yield from his investment?

An important factor is to be found in the *expected demand* for the products of the factory, both present and future. A large and especially a rapidly increasing demand for cotton piecegoods will be favourable to the marginal efficiency of capital, and more investment will naturally be made. For this purpose, it is not the current demand, but the expected future demand during the lifetime of the plant that will influence estimates of the net yield from investment. On many occasions, however, expectations about the future demand are considerably influenced by current experience ; to this extent the current demand will be a factor in determining the net yield from investment.

The *rate of growth of population* is also relevant in this connection. A rapidly growing population is usually supposed to raise the marginal efficiency of capital. Growing population means growing market for various classes of

goods, while a declining population results in a shrinking market for goods.

Another factor is the rate at which inventions and technological improvements are taking place. These tend to raise the marginal efficiency of capital. The best illustration is furnished by the history of the development of the automobile industry. When motor cars came into general use, it stimulated the growth of the glass industry, the rubber industry, the iron and steel industry, etc. A large number of factories were set up to manufacture motor parts ; hundreds of repair shops were established. The whole countryside became dotted with petrol stations.

Three other factors are also important:—the existing stock of capital goods of this type, the rate of investment currently going on in this field and the state of business confidence. Other things being equal, the larger the stock of existing capital goods of this type, the less will be the marginal efficiency of capital. As in the case of demand for a product, a large stock of capital goods in an industry would discourage potential investors from entering into the making of such goods. Similarly, if a large number of houses is already being constructed in a locality, people would not like to invest further in the construction of houses. Thus the rate of investment currently going on in any industry is an important factor in influencing the marginal efficiency of capital. If it is known that a considerable number of cotton textile mills is being set up, new investors would hesitate to invest in that direction, unless the demand conditions are expected to be extremely favourable.

Much will, of course, depend on the state of business confidence. It is not easy to form a correct estimate of the rates of return on an investment in the next ten or fifteen years. If businessmen are optimistic, they will form in general a more favourable estimate of the net returns than if they are in a depressed mood. Thus the temper of the business community is an important factor in the determination of the marginal efficiency of capital.

Lastly, the marginal efficiency of capital is also affected by the rates of taxation. Costs are increased and the profits are lowered by the various taxes levied by the government.

Very high rates of taxes may retard investment, especially if the business community is not in one of its optimistic moods.

Thus the marginal efficiency of capital is influenced by (*a*) the expected demand conditions, (*b*) the rate of growth of population, (*c*) making of inventions and other technological developments, (*d*) existing stock of capital goods of that type, (*e*) the rate of investment currently going on in the industry, (*f*) the state of business confidence and (*g*) the rates of taxes.

The rate of interest and investment : We have stated that the rate of interest is one of the two factors determining the volume of investment. Given the marginal efficiency of capital, the higher is the rate of interest, the smaller will be the volume of investment ; and the lower the rate of interest, the larger will be the volume of investment. This can be proved whether we regard the rate of interest as a cost factor or as a factor of capitalisation. The higher the rate of interest, the higher the cost of production. Interest is a cost which businessmen must pay when they invest. When the cost of borrowing increases, businessmen will borrow less money and so their investments, whether in stocks of goods or in machines and tools will decline. The opposite will happen when the rate of interest falls. The interest payments form in general a small part of the total expenses of production except in certain lines of production. So a rise in interest rates by one or two per cent will not materially affect the decisions of businessmen. The rate of interest, however, influences the capitalisation of investment goods. When the rate of interest rises, the value of capital goods will fall. At 3 per cent a government security yielding 3 per cent will be worth Rs. 100 ; if the rate of interest is 4 per cent, it will be worth only Rs. 75 ; at 5 per cent Rs. 60 and so on. Thus when the rate of interest rises, the values of securities will fall. This is likely to lower the incentive to invest on the part of businessmen. If the rate of interest is lowered, prices of securities will rise and ordinary shares will also rise in prices because the profits will be capitalised at the lower rate of interest. In such circumstances businessmen would naturally like to float more shares and invest the

money in investment goods. Thus the volume of investment may be regarded as interest-elastic.

This has been questioned by a number of economists. According to them, changes in the rates of interest to the extent of (say) 2 to 4 per cent are not likely to influence the behaviour of businessmen. Enquiries, conducted by a group of Oxford economists in 1938 supported this contention. In many lines of industrial production, businessmen have to face great risks; their estimate of the marginal efficiency of capital varies widely as a consequence. Hence a rise or fall in the rate of interest by 2 to 4 per cent will be regarded as of secondary importance. If, as a result of pessimistic expectations, the marginal efficiency of capital falls to negative levels and businessmen anticipate losses even on the best investments, a fall in the rate of interest by 2 to 4 per cent or even a zero rate of interest will not stimulate investment under such circumstances. Hence these economists concluded that the volume of investment was not interest-elastic.

There is certainly a good deal of truth in this contention. But to admit this is not to deny the influence of the rate of interest on the volume of investment. While the effects of a change in the rate of interest on the decisions to invest in highly risky lines of production may be doubtful, there are many other lines of business like house-building, road and bridge construction, construction and electrification of railways, major capital reorganisations in the basic industries like the iron and steel industries, where the risks of investment are considerably small. In such industries the effects of changes in the rate of interest on the volume of investment may be decisive. Even in the more risky enterprises, the businessman "may not be entirely uninfluenced in the timing of his project if he knows, for example, that he could earn, say, 10 per cent per annum on any funds available for investment by placing them for the next year or two in government securities, whereas he is likely thereafter only to lose, say, 2½ per cent on any money which he withdraws from such securities".[2] Whatever the range of

[2] Meade. *Planning and the Price Mechanism*, p. 27-28.

estimates of the marginal efficiency of capital, some businessmen who have been hesitating will be influenced favourably towards investing by a fall in interest rates, while some who are on the margin of doubt will probably refrain from investment by a rise in the rate of interest.

Determinants of the rate of interest : What factors determine the rate of interest? Interest is the price charged for the use of money, and is determined on the one hand by the quantity of money that has been issued and on the other hand by the demand for money. The demand for money means the demand for holding money, and our next task is to analyse the components of the demand for money. People want to hold money from four different motives, *viz.*, income motive, business motive, precautionary motive and speculative motive. Consumers want to hold money to bridge over the interval between their receipts and expenditure. This demand is related to their incomes. Businessmen demand to hold money for a similar purpose. All of them demand money to meet unforeseen contingencies. These three motives constitute what has been called the active transactions demand for money. This is related to the volume of transactions to be financed, which, in its turn, depends upon the levels of income. Hence we have to focus attention on the fourth motive:—the speculative demand for money. When people expect a rise in the prices of securities, they would probably get rid of extra cash in their possession in exchange for securities. The opposite will happen when they expect a fall in the prices of securities. Thus more money may be held as a protection against an anticipated fall in the prices of securities.

Since the rate of interest is inversely proportional to the price of securities, the amount of money held on account of the speculative motive is very sensitive to the rate of interest, especially at very high and very low levels. At a high rate of interest, people will hold only a small amount of idle money on account of two reasons. First, the keeping of idle money will mean a great loss as the money, if invested at the current rate, would have earned the high interest. Secondly, at such a high rate, belief gains ground that downward

changes in the rate of interest are bound to come. In other words, the prices of securities are expected to rise. So people will want to shift now to securities, and to hold smaller quantities of money. At a low rate, the people will hold larger quantities of money because the cost of holding idle money is now small and because people expect that the rate of interest will rise in the future.

Since money is the most liquid of all assets, the demand for holding money means the same thing as the preference for liquidity. Hence the theory is known as the liquidity-preference theory. The strength of the preference for liquidity is highly variable. At one time it discourages the holding of idle money, as when the people expect the prices of securities to go up. At another time people may hoard large sums of cash, as when they expect security prices to fall to low levels.

At particular levels of the rate of interest people will want to hold an amount of money determined by their liquidity-preference. If the actual supply of money is increased by the central bank, people will find themselves in possession of extra cash—more than they want to hold at the present rate of interest. They will, therefore, try to get rid of the extra cash in exchange of securities. This will raise the prices of securities. In other words, the rate of interest will fall until the people are induced to hold the extra cash at the lower rate of interest. If, however, the actual amount of money is less than what the public wants to hold at the current rate of interest, they will begin to sell securities to get the desired amount of cash in their possession. As a result, security prices will fall, *i.e.*, the rate of interest will rise. At the higher rate people's demand for cash will decline until it becomes equal to the actual amount of money. Thus the rate of interest is determined by the interaction of the supply of money and the liquidity-preference of the people.

Determinants of income and employment : We have given a broad analysis of the factors which determine the level of income and employment. It remains to piece them together and to show how through the inter-action of these

factors the level of income and employment is uniquely determined.

The multiplier and the acceleration : What is the relation between investment and income? We know that the level of income depends on the volume of investment. When the volume of investment increases or decreases, the level of income rises or falls. Is the rate of change in investment related in any way to rate of change in income? Does the level of income rise by Rs. 100 when investment increases by Rs. 100? Or does it rise by a larger or smaller percentage? Here we are going to analyse the effects of a change in investment upon income and employment.

The multiplier : Let us start with a situation where the national income is Rs. 100 crores, and the propensity to consume is such that consumers spend Rs. 80 crores, and that investment is going on at the rate of Rs. 20 crores a year. Since income is Rs. 100 crores and consumption is Rs. 80 crores, saving is equal to Rs. 20 crores, and is thus equal to investment. So long as the propensity to consume and investment remain unchanged, there will be no change in the level of the national income.

But, suppose that due to some reason or other, investment rises by Rs. 1 crore so that the total investment is now equal to Rs. 21 crores. How will this increase in investment affect the level of the national income? When investors spend an extra sum of one crore of rupees, the sellers of investment goods will have their incomes increased by Rs. 1 crore. Thus an increase in investment by Rs. 1 crore raises the national income by Rs. 1 crore in the first instance. This is, however, not the end of the matter. When A spends more money on buying B's goods, B's income is raised. B will then spend more money on consumption, which may, in its turn, increase C's income, who will then spend more than before and so forth. Thus sellers of investment goods whose incomes have increased by Rs. 1 crore will spend more money on consumption. The higher the income, the larger the expenditure on consumption. The extent of the increase in expenditure on consumption will depend on the marginal propensity to consume. The rate at which consumption

changes in response, to a change in income is known as the *marginal propensity to consume*. Let us suppose that the marginal propensity to consume is equal to $\frac{2}{3}$. That is, two-thirds of every rise in income is spent on consumption and one-third is saved. The marginal propensity to save, which is the counterpart to the marginal propensity to consume, is then equal to $\frac{1}{3}$.

Since the marginal propensity to consume is $\frac{2}{3}$, so sellers of investment goods whose incomes have first increased by Rs. 1 crore, will spend two-thirds of this (*i.e.*, Rs. 66$\frac{2}{3}$ lakhs) on consumption. This is the second round of the increase in incomes which has now increased by Rs. 1·66$\frac{2}{3}$ crores. The sellers and makers of consumption goods now find that their incomes have increased by Rs. 66$\frac{2}{3}$ lakhs; and they will then spend $\frac{2}{3}$ of Rs. 66$\frac{2}{3}$ lakhs, *i.e.*, Rs. 44 4/9 lakhs on consumption. Total income is now raised by Rs. 2·11 1/9 (*i.e.*, Rs. 1 cr. + ·66$\frac{2}{3}$ cr. + ·44 4/9 cr.) crores. This is the third round of the increase in incomes. In this way, as people who receive higher incomes proceed to spend more money on consumption, incomes of others increase, who, in their turn, spend more, and this goes on until the level of money incomes rises by Rs. 3 crores, when further increase in incomes will stop. This can be found out by adding together all the increases in income that will take place. This ratio of the increase in the total income to the increase in investment is called *the multiplier*. Since in our illustration, investment increased by Rs. 1 crores and the income by Rs. 3 crores, the multiplier is equal to 3.

Is there any rule by which the extent of the increase in income can be determined? Whatever the level of income, the volume of investment must be equal to saving. When investment increases by Rs. 1 crore, saving must also rise by Rs. 1 crore. When the marginal propensity to consume is equal to $\frac{2}{3}$, the people save only one-third of the increase in their incomes. Thus their savings will increase by Rs. 1 crore only when their incomes increase by Rs. 3 crores. When investment increases, income will rise to the extent necessary for generating a volume of savings (out of that income) equal to the increase in investment. We can then trace the relation between the multiplier and the marginal

propensity to consume. Let M be the multiplier and r be the marginal propensity to consume. The relation between M and r may be found out from the following:

$$M = \frac{1}{1-r}$$

Since we assume that r is equal to $\frac{2}{3}$, $1-r$ is equal to $\frac{1}{3}$; and $\frac{1}{\frac{1}{3}}$ is equal to 3. The multiplier is then equal to 3.

Let us next suppose that the marginal propensity to consume is equal to $\frac{3}{4}$, instead of $\frac{2}{3}$. In other words, it is now assumed to be higher. The multiplier will then be equal to

$$\frac{1}{1-\frac{3}{4}} \quad i.e., 4.$$

In other words, the level of the income will rise by 4. When the marginal propensity to consume is high, the multiplier will also be high and the rise in income will also be high. The multiplier is the reciprocal of the marginal propensity to save.

The question may be asked, why will not the initial increase in investment and income spread and spread thereby raising incomes indefinitely? Why does not the process go on endlessly? This is due to the fact that "leakages" occur in the process of expansion. That portion of the higher incomes which is saved 'leaks' out from the process, and does not add to the income-stream. If the whole of the higher income is spent, and none is saved, the process will go on endlessly. But if a part is saved, the process of expansion would come to an end, the rate of expansion in income depending upon the reciprocal of the proportion that is saved.[3]

The acceleration effect : The theory of the multiplier states the effect of an increase in investment upon the level of incomes. This is, however, not the end of the matter. In order to determine the total effect of the increased invest-

ment upon income, we must take account of the fact that the increase in income brought about by the rise in investment will also induce further private investment, and so start another round in the process of expansion of income. The latter is known as the *acceleration effect.*

When the volume of investment rises by Rs. 1 crore, consumption expenditure will increase by Rs. $66\frac{2}{3}$ lakhs, if the marginal propensity to consume is $\frac{2}{3}$. Now as consumption expenditure rises, business firms dealing in consumers' goods will find their sales increasing. They will send more orders for such goods, and manufactures will be induced to expand their investment in the making of such goods. When more textile goods are being sold, textile mills will instal more looms and spindles. Thus the level of investment also depends upon the rate of change in income, and the consequent change in consumption. An increase in income thus 'accelerates' the increase in investment with all its consequences. That is why it is called the acceleration effect, and the ratio of the secondary change in investment induced by the change in consumption expenditure to the change in such expenditure is known as the *acceleration co-efficient.* If, for example, an increase in the consumption expenditure by Rs. 2 crores induces businessmen to increase their investments by two-thirds of the initial rise in investment, the acceleration co-efficient is equal to two-sixth.

The acceleration principle may work out in three different ways. First, let us suppose that the demand for consumers' goods is at the rate of 1,000 units per week, and that the dealers, on the average, keep stocks equal to 1,000 units. If the demand for this product rises to 1,100 units per week, the dealers would have to purchase 100 units to make up for the fall in stocks caused by the first week's larger sales, and for another 100 units if they want to keep one week's sale in stock as before. In other words, their purchase will increase by 200 units. A ten per cent increase in sales has thus led to a 20 per cent increase in purchases by dealers. The effect of the initial rise in demand has been accelerated.

Secondly, if the demand for durable consumers' goods increases, the increase in the demand for the capital goods

required for making these consumers' goods will also be accelerated. Let us suppose that there are 100 sewing machines and their average depreciation is 10 per cent, *i.e.*, only 10 machines have to be replaced every year. If the demand for sewing machines does not change, then the manufacturers of such machines need produce only 10 machines per year. If, now, the demand for sewing machines rises by 10 per cent, the manufacturers must, then, produce 20 machines (10 for replacement and 10 for new demand). Thus a ten per cent increase in demand has led to a 100 per cent increase for the volumes of capital goods necessary to produce sewing machines.

Lastly, if the demand for capital goods changes then the demand for the machines which make these capital goods will change in an accelerated manner. A simple example will clarify the working of the acceleration effect. Let us suppose that there are only 400 textile mills in India, using a particular type of loom. There are 400 looms of this type, and 10 per cent of them have to be replaced every year. The capital goods industry producing these looms will then manufacture 40 looms every year, and its installed capacity is such as to turn out this number of looms. If, in response to increased demand, ten more textile mills are established in any year, the demand for such looms rises by 10 units. That year, the capital goods industry making looms will have to supply 50 looms (40 for replacement and ten for additions). Thus a 2·5 per cent increase in the demand for looms has given rise to a 25 per cent rise in the demand for capital goods for making looms. Should the demand for looms rise next year by another, 10 units, the capital goods industry making looms will have to supply in that year 41 looms for replacement and ten looms for new additions, *i.e.*, 51 looms in all. That is, an increase in the demand for looms by 2·4 per cent has raised the demand for the capital goods by only 2 per cent. Thus while the increase in the demand for additional looms has fallen by 1 per cent from the last year's level, the demand for machines for making looms actually rises from 25 per cent in the first year to only 2 per cent in the second year. Should the demand for looms in the third year remain at 420 looms as in the second year, the demand

for the machines for making these looms will fall down to 42 per year, whereas the industry has already expanded capacity to produce 51 looms per year. The industry, therefore, would experience a very sharp decline in demand, though the demand for looms remains the same as before.

The acceleration effect is also known as the principle of derived demand. It shows how a small change in the demand for goods will transmit itself with accelerated force to capital-goods industries.

The inter-action of the multiplier and the acceleration :

When investment changes, the effects of the multiplier and the acceleration are combined together. When an increase in investment occurs, incomes are raised up to the level depending upon the multiplier. This increase in income will induce a further increase in investment, the extent of the rise in investment being dependent on the acceleration co-efficient. This induced rise in investment will start the multiplier process again, tending to further rises in income, causing, in its turn, another rise in investment and so on.[4] The total of these multiplier and acceleration effects is called the *leverage effect*.

Thus when the multiplier is combined with the acceleration effect, there will be a continuous rise in income. Will this process of expansion ever end? If both the marginal propensity to consume and the acceleration effect are very high, the process of expansion will go on to higher and higher levels until the ceiling of full employment of labour or capital stock is reached. At this point output will flatten out and induced investment will cease. Apart from this case, so long as the marginal propensity to save is positive, the rise in income will be slowed down progressively as a continuously larger part of the increase in income is saved. This fact eventually brings about a decline in induced investment. In the illustration on the working of the acceleration effect, we have seen that in the third year an increase in the demand for goods by almost the same percentage causes a serious

[4] For a very good discussion, see P. A. Samuelson. "Interaction between the Multiplier Analysis and the Principle of Acceleration", republished in the *Readings in Business Cycle Theory*.

decline in the demand in the capital goods industries. When this decline in induced investment exceeds the rise in consumption, a decline in income will begin. Thus in spite of the acceleration effect, a positive marginal propensity to save will eventually halt the process of expansion in income. Moreover, a continuous increase in investment tends to lower the marginal efficiency of capital until further investment is no larger profitable.

Summary : We are now in a position to summarise the main points discussed so far. Since one man's expenditure is another man's income, total money income of a community is equal to its total spending. Total spending may be divided into two parts,—expenditure on consumers' goods and expenditure on investment. The two together make up total spending and total income. The volume of employment also depends on total spending, and therefore on the total income. If there is to be full employment, total spending must then, be high enough to provide jobs for everybody who wants a job.

The volume of employment or the level of income, therefore, depends upon the expenditure on consumers' goods and that on investment: in short, upon consumption and investment.

Expenditure on consumption depends on two factors, the total income and the propensity to consume. The latter is that proportion of money income which is spent on consumption. So given the level of money income, consumption depends upon the propensity to consume. As income rises, consumption will also increase. But it will increase generally by a smaller percentage. In other words the propensity to consume is less than unity. Under ordinary conditions propensity to consume is, more or less, a stable factor. The volume of consumption is, therefore, a residual factor, rising or falling as income changes to such a level as is necessary to equate saving with investment.

Hence the most dynamic factor in the determination of income and employment is investment. It is fluctuations in investment which are primarily responsible for the fluctuations in income and employment. Now investment, in its turn depends upon two factors,—the marginal efficiency of

capital and the rate of interest. The rate of interest is determind by the quantity of money and the liquidity preference schedule. These three,—marginal efficiency of capital, the liquidity preference schedule and the quantity of money—together determine the volume of investment. The relation between these three can be traced in the following way. The rate of interest will be such as will equate the quantity of money to the schedule of liquidity-preference. Once the rate of interest is thus determined, the volume of investment will be such as will bring the marginal efficiency of capital in equilibrium with the rate of interest. The volume of investment goes on increasing or decreasing until the marginal efficiency of capital is equal to the rate of interest.

Given the volume of investment, how do we find out the level of income? Another cornerstone of the theory is that investment is equal to saving. So when investment increases by a given amount, the level of income must rise sufficiently high as to induce the people to save an equal amount of money. If investment increases by ten crores of rupees, income must rise so high as to yield an extra ten crores' worth of saving. The rise in the level of income, therefore, depends upon the proportion of their income which people save. If people save one-third of the increase in their incomes, the level of incomes must rise three times. In other words, to induce the people to save an extra ten crores, income must rise by 30 crores, as one-third of thirty crores is equal to ten crores. The term, 'marginal propensity to save' is used to denote the proportion of the change in income which is saved by the people. If the marginal propensity to save is one-third, income will change by 3; if the marginal propensity to save is equal to one-fourth, income will change by 4. The change in income will be the reciprocal of the marginal propensity to save. The rate by which income changes, following a change in investment, is called the multiplier. When the marginal propensity to save is equal to one-third, the multiplier is equal to 3. The multiplier is the reciprocal of the marginal propensity to save. The marginal propensity to save is the counterpart of the marginal propensity to consume. What is not con-

sumed is saved. The level of income is, therefore, determined by the volume of investment and the marginal propensity to consume.

A further factor has to be taken into account. As income changes under the impact of changes in investment, this will change businessmen's expectations and so will raise or lower the marginal efficiency of capital. As the latter changes, the volume of investment will also change. This induced investment, induced by changes in income, is called the acceleration. The effect of the principle of acceleration is to cause further changes in income. Thus the final level to which income will rise or fall will be the resultant of the two effects—the multiplier effect and the acceleration effect.

Wages and employment : Is there any relation between the rates of wages and the volume of employment? Here we come to one of the most baffling problems in economics. The simplest relation that comes at once to the mind is that if wage rates are high, employment will be low and *vice versa*. So when wage rates are cut during a period of depression this will increase the volume of employment. A cut in wage rates reduces the costs of a businessman ; so he will lower his prices and at lower prices his sales are expected to go up. Naturally he will offer more employment. This may be true of an individual businessman. But the matter becomes complicated when all businessmen introduce wage cuts.

An all-round wage cut will of course mean an all-round reduction in costs. But this will also cause the money incomes of the wage-earners to fall, and so their expenditure on consumption will tend to decline. The aggregate demand for goods will, therefore, fall. Wage cuts are double-edged ; they reduce costs and reduce money incomes and therefore the total demand. There is no certainty that wage cuts will result in increased employment. This will be the case if the total demand falls less than the fall in costs. But there is no guarantee that this will happen.

The matter is however, more complicated. The fall in costs and in total demand may have indirect but favourable effect on employment. First, the fall in income means smaller sales of goods, and so smaller number of transactions. The transactions demand for money falls, and if the quantity

of money remains the same, this will cause the rate of interest to decline. This lowering of interest may lead to increased investment and so to more employment. Moreover, a cut in wages may induce businessmen to substitute labour (which is now cheaper because of wage cuts) for other factors on production. So employment of labour will tend to increase. This will, however, happen only if wage rates are flexible while prices of other factors are rigid. But it seems more reasonable to assume that prices of other factors are also flexible. In that case wage cuts may be followed by reductions in the prices of other factors, and so may not lead to the substitution of labour for other factors. If, however, one sticks to the assumption that while wages are flexible, prices of other factors such as interest charges, rent etc. are rigid, this fact will tend to reduce the aggregate demand. Cuts in wages mean reduction in the incomes of wage-earners whose marginal propensity to consume is very high; while money incomes of interest-receivers and rent-receivers remain the same. As their marginal propensity to consume is low, the aggregate demand is, on the whole, likely to decline. The result will be unfavourable to employment.

Wage cuts may also be followed by favourable effects on foreign investment. When wages are reduced only in our country, prices of exports produced by us will fall in foreign markets. This will stimulate exports and so tend to make the balance of payments favourable to us. In other words, our foreign investment will increase, leading to more employment. If, however, there are expectations of further wage cuts, foreign countries may not buy in large quantities *at the present moment.* In that case foreign investment may actually decline.

The effect of wage cuts upon the volume of employment depends not only on investment but also on what happens to the propensity to consume. Since the propensity to consume depends on the distribution of income, wage cuts are likely to lower the propensity to consume. This is obvious from the fact that wage cuts lower the incomes of wage-earners. On the other hand, the indirect effect of wage cuts on the propensity to consume may be favourable. In so far as wage cuts lead to lower prices, this increases the real

value of the liquid assets. When the real value of the accumulated savings increases, consumers feel richer and may spend more money out of their incomes. This will tend to raise consumption and so to increase employment. The extent of this favourable effect will depend upon how widely are the liquid assets distributed in the community.

Thus there is no certainty that wage cuts will increase employment. The factors that favour employment seem to be roughly balanced by those that reduce it. The relation between wages and employment is thus extremely complex. "There are few, if indeed any, economists now who will dogmatically assert *either* that wage cuts will surely increase employment *or* that such cuts cannot possibly have any favourable effects. There are too many unknowns that vary with special conditions and special circumstances".[5]

[5] Hansen A. H.—*Monetary Theory and Fiscal Policy*, p. 126.

CHAPTER XLI

UNEMPLOYMENT AND FULL EMPLOYMENT

One of the most important practical problems facing all industrial countries is the existence of unemployment among the population. In all such countries the supply of labour tends usually to be fixed in the short period. The demand for the services of labour is, however, variable on account of the changing consumer preferences. Hence maladjustments are bound to occur between the demand and supply of labour. The result will be unemployment.

It is, first of all, necessary to define term "unemployment". As commonly understood it does not refer to the unemployment among the leisured classes. It only refers to unemployment among wage-earning classes. But the latter may remain unemployed due to idleness. We do not regard such workers as unemployed. The unemployed are those persons who cannot obtain the work they want at existing rates of pay.

Kinds of unemployment.

Unemployment has been classified by some writers in different ways. First, there is *casual unemployment.* In almost all industries, there are sudden fluctuations of activity. At one time activity is very brisk, and employers require a large labour force to deal with rushes of work. At other times work is comparatively slack, when a part of the labour force becomes unemployed. This is specially the case with dock-labourers. There is thus a floating surplus of the unemployed, called the "reserve of labour". Secondly, there is seasonal unemployment. In some industries workers get jobs only for a certain period of the year. Such is the case with the sugar industry in India where work is carried on from November to April or May. Workers remain idle during the intervening period. This is also the case with our agricultural labourers. Thirdly, another type is known as *cyclical unemployment.* Unemployment may be caused by cyclical fluctuations of the industry. The course of business shows a wave-like movement, consisting of alternating

periods of booms and depressions. These trade cycles exercise great influence on the volume of unemployment which decreases when trade is good and increases when it is bad. Fourthly, some unemployment is also caused by changes in the industrial structure which are constantly occuring. Modern businesses are essentially dynamic ; new machineries and inventions are being adopted, throwing some workers out of employment for the time being. Demand is constantly shifting from one product to another, leaving behind it a trial of unemployment. This is known as *"technological unemployment"*. Lastly, there is another type of unemployment due to the frictions to which the economic system is subject. This may be caused by the seasonal fluctuations in demand or by loss of time between different jobs, etc. This is *frictional unemployment.*

Causes.

The causes of unemployment are extremely complex. We can only discuss a few of the main causes. Seasonal unemployment is due primarily to climatic and social factors. Weather or the course of nature brings variations in demand for labour between different months. Technological unemployment is due to the growth of new trades and the decline of old ones as in the case of the motor and horse transport. It may also be due to the rapid introduction of machines which replace manual labour as in the case of our hand-spinning and hand-weaving industries. Such unemployment may also be due to the adoption of plans of rationalisation, etc. Greater mobility of labour will often cut short such periods of unemployment. But unfortunately mobility of labour is often absent in many occupations. Such absence of mobility is often a cause of unemployment. Cyclical unemployment is bound up with the causes which lie at the root of the recurring trade cycles.

Keynes' involuntary unemployment.

According to classical writers, unemployment was also due to the fact that the level of money wages was being maintained by trade union pressure at an artificially high level. If, in the face of falling prices, wage-rates are kept rigid, a certain amount of unemployment is bound to ensue because at the high rate employers may find it

impossible to absorb the whole labour supply. This analysis has been objected to by Lord Keynes. According to him, people are unemployed because the current demand for goods and services is not sufficient to absorb all available labour into different occupations. Employment depends on the spending of the whole income of the people either on consumption or on investment. But as the level of money income increases in a community, people will tend to spend a smaller proportion of their incomes on immediate consumption. So there will be a deficiency of return to entrepreneurs who will therefore try to cut down the volume of employment they offer to the factors. This tendency may be counteracted if investment in capital goods expands sufficiently. But in a wealthy country, there will be comparatively few new opportunities for investment. Hence the necessary increase in the volume of investment may not be made with the result that a portion of labour force will be unable to find employment.[1]

Remedies.

Various remedies have been suggested from time to time to solve the problem of unemployment. The remedy for casual unemployment is "decasualization". The system of keeping individual reserves should be terminated as far as possible, and all casual labour should be engaged from central sources. For this purpose, Labour or Employment Exchanges should be established. At these exchanges, a register is kept regarding the unemployed persons to whom jobs under different employers are allocated as these fall vacant. Employers notify all vacancies to the exchanges which try to find suitable men from among registered workers. Seasonal unemployment is sought to be tackled by the method of dovetailing one seasonal trade with another. For example, agricultural workers may adopt some cottage industries as subsidiary occupations. Moreover, employers may be encouraged, where possible, to make goods to stock during the slack season, or they can accept advance orders. Measures which will increase the mobility of labour are bound to reduce the volume of unemployment. Provisions should be made for imparting

[1] *General Theory of Employment, Interest and Money.*

technical training in other trades to workers who have lost their jobs due to a shift of demand from their industries. A most usually discussed method is large capital expenditure by the public authorities to stimulate the collective demand for labour. When unemployment is acute, authorities should carry out large schemes of development, *e.g.*, construction of roads, parks, post offices, etc. This will relieve a considerable volume of unemployment.

Unemployment insurance.

In spite of everything that has been done, a number of men is bound to remain unemployed. The government of every advanced country has been forced to come to the support of these workers by adopting schemes of unemployment insurance. A central unemployment fund is created, consisting of contributions made by workers, employers and the state. Workers paid contributions to this fund during periods of employment, and obtained "doles" when out of work.

Meaning of full employment.

Full employment. Unemployment is both a social and economic evil. Hence all modern states have set before themselves the task of abolishing mass unemployment. In recent times, therefore, the maintenance of full employment is being increasingly regarded as the goal of economic policy. It should be noted that the expression, "full employment" is not to be understood in its literal sense. It refers to the state in which involuntary unemployment is "being kept down so low as not to constitute any serious social problem." There will, of course, be a small number of men who will remain unemployed at any given moment,—persons changing over from one job to another, or persons who are waiting to be re-trained for a different occupation. The existence of this minimum of "frictional unemployment" is quite compatible with full employment as it is understood by the majority of writers. All that is necessary for the existence of full employment is that the men who become unemployed at any given moment should be able to find, without delay, new jobs at fair wages within their capacity.

According to the classical writers, in a freely competitive system, serious unemployment is a passing phase. Everyone whose labour is worth anything at all would be able, sooner

or later, to get jobs suited to this capacity. If anybody remained unemployed for any considerable time, it only meant that he was demanding more wages than he was worth. There would, of course, be some amount of frictional unemployment as also unemployment due to the decay of some trades or areas. But the competitive economic system possessed sufficient elasticity whereby these men could be absorbed into different jobs in course of a reasonable period of time. The existence of prolonged unemployment can only be due to the fact that workers are demanding too high wages. The unduly high rates of wages may be due to the pressure exerted by monopolistic trade unions. If such monopolistic practices are given up, competition will force wage-rate down to the level at which the unemployed workers can be absorbed into suitable jobs.

Causes of lapses from full employment.

Modern economists no longer accept this view. It is now admitted that a reduction of money wages will not cause such increase in the volume of employment as to abolish all unemployment. The late Lord Keynes has done much to point out the deficiencies of the classical analysis and to suggest the methods by which the stage of full employment may be reached. According to him, the existence of unemployment is due to the fact that the demand for the services of labour is insufficient to absorb the available supply. Employment depends upon the expenditure of the community. Full employment depends upon the spending of the total income on the production of a given period. The total income may be spent on consumption goods and on investment goods in a certain proportion. If some people decide to spend less on consumption, this deficiency in consumer expenditure must be made good by increased expenditure on investment goods. If this is not done, there will be a deficiency of demand as a result of which all the available labour cannot be absorbed into production. According to Keynes, the necessary increase in investment may not be forthcoming after a certain stage. And unless special steps are taken to stimulate investment and demand, unemployment will tend to become chronic in that community.

The road to full employment may be reached in any of the two ways: either by stimulating consumption or by stimulating investment. Since unemployment is caused by a deficiency of demand, we may strive to cure it by taking steps to stimulate consumption by various measures. This is sought to be done by securing a redistribution of income from richer classes with their low propensity to consume to the poorer classes with a high propensity to consume. This can be done by increasing the rates of direct taxes on the rich and reducing the indirect taxes on the poor, or by paying family allowances to the poor. (But the main defect of this system of levying very high rates of income tax is that it may depress private investment to an extent that may lead to larger volumes of unemployment.)

Three ways to full employment.

The generally accepted remedy is the *stimulation of investment* by various means. Investment may be of two types, private and public. Steps may be taken to stimulate the volume of private investment. Private investment declines on account of the fact that there takes place a fall in the expected rate of profit. In order to prevent the fall in the rate of private investment, the rate of interest should be reduced in pursuance of a cheap money policy. Or, the rates of income tax may be reduced to such an extent that private investment may be stimulated to the degree necessary to establish full employment. (But the main difficulty of this method is that entrepreneurs may be in such a pessimistic mood that they may not respond even to such inducements. Hence this policy cannot be regarded as satisfactory, if pursued alone.) But measures to stimulate private investment may be usefully adopted along with other measures to establish full employment.

Deficit spending: Lastly, full employment can be reached by the *government spending on public investment* in a contra-cyclical direction. If the government spends large sums of money on the construction of post offices, roads, and other public works during a depression, or provides subsidies to stimulate mass consumption in the shape of family allowances etc., this will increase effective demand directly,

and lead to full employment. This expenditure should be financed by raising loans in such a way as not to compete with private investment. This has been called the method of "deficit spending". This method will bring about a fundamental change in the budgetory policy of the government. Uptill now, the governments have rigidly followed the policy of balancing their budgets while leaving the national economy in an unbalanced stage. On many occasions, such a balancing of the budget has been more nominal than real, and often during depressions, the attempt to balance the budget had to be given up on account of the impossibility of the task. But in future, this policy should be changed. Deficit budgeting during a depression should now be considered a virtue rather than a sin. The state should assume responsibility for maintaining total outlay at such a level as to establish and maintain full employment. During depressions, the attempt to balance the budgets should be deliberately given up. As private investment must have shrunk, and the outlay on consumption had fallen to such an extent as to cause severe depression, the state should fill in the gap, and spend more money either on the construction of suitable public works (plans of which should be previously laid down), or on stimulating mass consumption. The budget should be run into a deficit sufficient to provide adequate outlay for the maintenance of full employment. During booms, public expenditure should be cut down, while large revenues should be raised by raising the tax rates. The budget must show surpluses, which should then be utilised to wipe off the accumulated deficits of the years of depression.

There is no doubt that if this bold policy is pursued and government expenditure on public investment and subsidies to mass consumption are maintained at a sufficiently high level, full employment can be easily established. (This, however, presupposes perfect mobility of labour if all unemployed workers are to get jobs within a short period. But mobility of labour is not as perfect as is necessary to secure full employment.) Hence it might be necessary to adopt two other subsidiary measures. First,

the government should organize special measures for increasing the mobility of labour by establishing labour exchanges, providing adequate re-training facilities etc. Secondly, the location of industries should be controlled by the state both to prevent overcrowding of population and to divert more industries to specially depressed areas. For, as Lord Beveridge pointed out, there is no sense in using the vast developments of transport in order to throw an increasing burden of travel on human beings rather than on goods.

Difficulties of deficit spending.

Many objections have been raised against the pursuit of such a policy. The fundamental criticism is that this policy will lead to inflation. In such a stage of full employment, the bargaining power of trade unions will increase materially, and they may pursue a policy of raising rates of money wages beyond the level warranted by productivity. Or, in a backward economy, where existing equipment is insufficient to absorb available labour, deficit spending will not be followed by a proper expansion in the production of goods. As a result of these factors, there may take place a continuous increase in prices with disastrous effect on the economic system. The pressure of rising wages may, however, be tackled by a policy of price control, or the grant of subsidies to stabilise cost of living or the levy of higher income taxes. In a backward economy, it may be essential to retain in the hands of government, such measures of control as were used during the wartime. Another criticism points out the inherent dangers of a continuous pursuit of deficit spending. If businessmen expect the deficit spending to continue in large volumes, they may be affected by the fear of impaired credit or of inflation, or of burdensome taxes in the future. These are all retarding forces. Doubts have also been raised about the dangers of a growing volume of public debts. Moreover, according to this policy, the government should take steps to check public investment once it is found that private investment is reviving sufficiently to take up the slack. But a popular government will not find it easy to taper public investment off promptly when the need for a stimulus decreases. While the expenditure

lasts it is too tempting to those who could use them as political bribes. The combination of skill, integrity, and backbone necessary for putting a check to the public works programme just at the right moment is extraordinarily difficult to find.

CHAPTER XLII

INTERNATIONAL TRADE

All trade takes place on the basis of division of labour and specialisation. International trade is no exception to this. A person may possess abilities to perform a variety of tasks. But he specialises on those in which his ability is the greatest, leaving other activities to different individuals. Similarly, a region or a country may possess the resources to produce a large number of commodities. But it usually specialises on a narrow range of goods, leaving to others the production of different commodities, and then exchanges its own products with the output of other regions or countries, with mutual benefit to all parties. A man may be naturally gifted with the abilities of an engineer, while another has a natural bent towards the study of medicine. It is to their mutual benefit that the first individual should become an engineer, while the second should take up the profession of medicine. Similarly, different regions are differently equipped with productive resources. It will be to their mutual advantage if both specialise in the production of goods in which their comparative advantages are the greatest. In view of such fundamental similarities, is there any necessity for a separate theory of international trade?

International trade and domestic trade : The classical writers like Adam Smith and Ricardo believed that there were important distinctions between domestic and international trade. According to them, capital and labour were mobile within a country; but between different countries, such mobility was more or less absent. If, within a country the rates of wages were higher in one locality or occupation than in another, more people would move to that locality, or enter that occupation where wages were higher. As a result, labourers of equal efficiency will obtain equal wages within the country. But there is no such tendency between different countries. "Man is, of all sorts of

luggage, the most difficult to be transported." Owing to the differences of customs, language, government, etc., people are generally unwilling to migrate to different countries. Similarly with capital. As a result, rates of wages and interest remained at different levels in different countries. Hence a separate theory was necessary to explain the course of international trade.

These assumptions of the classical school have been criticised on the ground that while labour and capital are not perfectly mobile within a country, they are not perfectly immobile between different countries.[1] For this reason, some writers have questioned the necessity of making any distinction between internal and international trade. Of course, it is true that labour is not perfectly mobile within a country. There are many obstacles to the free movement of labour in a country, and the formulation of the concept of "non-competing" groups of labour is a recognition of this fact.

But it is a fact that if we are offered the same rate of interest in our own country and in a foreign country, we would invariably prefer to invest at home. So long as this preference for home and the prejudice against foreigners remain, the rates of earning of the different factors of equal efficiency would not be equalised between different countries. Another reason for treating the theory of international trade separately is that the facilities under which productive activities are carried on are not the same in different countries. "The citizens of one country are subject to the same system of national and local taxation, to the same regulations for health, sanitation, factory organization, education and social insurance, the same policy with regard to transport and public utilities, the same laws regarding industrial combination and trade unions, the same commercial code." Thus the facilities of production differ in different countries according as these regulations are not similar. The general level of costs is thus often different, lower in one country and higher in another. Owing to the various activities of the government, nations,

[1] See an article by J. H. Williams. "Theory of International Trade Reconsidered," in the *Economic Journal*, 1929.

tend to develop barriers, natural and artificial, which impede the free working of economic forces between different countries.

3. Lastly, each country has got a different currency system. The exchange of goods between different countries therefore gives rise to foreign exchange operations which are absent in all internal transactions. These foreign exchange operations often give rise to many complications in the course of trade. Moreover, each country is under the control of a separate Central Bank, each following a separate monetary policy which vitally affects the foreign trade of the country. Hence there is some necessity for formulating a separate theory of international trade.

Conditions for the development of international trade : All trade takes place because of differences in costs. International trade is no exception to this rule. To illustrate this, let us take up the case of two countries producing only two commodities. In country A,

10 days of labour produce 20 units of jute.
10 days of labour ,, 30 units of cotton.

In country B,

10 days of labour produce 10 units of jute.
10 days of labour ,, 15 units of cotton.

In this case, country A is absolutely superior to the country B in the production of both these goods. Measured in terms of days of labour, differences in costs are absolute between the two countries. Is there any possibility of trade between these countries? In country A, the cost of producing 20 units of jute are equal to those of producing 30 units of cotton. So 2 units of jute will sell at a price which will fetch 3 units of cotton. In country B, the cost of production of 10 units of jute is equal to that of 15 units of cotton. So in that country also, the price of 2 units of jute will be equal to that of 3 units of cotton. The ratio of costs of the two products (*i e.,* 2 units to 3 units) is the same in both countries. If the country A sends 2 units of jute to B for trading purposes, it will not gain anything as in both countries, 2 units of jute sell for 3 units of cotton. Thus in spite of absolute superiority in both directions, the first country does not gain anything by trade with the second.

Let us change the examples a little. Suppose in country A,

10 days of labour	produce	20 units of jute.
10 days of labour	,,	30 units of cotton.

In country B,

10 days of labour	produce	10 units of jute.
10 days of labour	,,	10 units of cotton.

In the first country, 2 units of jute will sell for 3 units of cotton as before. In the second country, however, the price of 2 units of jute will be equal to that of 2 units of cotton. It will now be profitable for merchants in country A to send cotton to the second country so long as it can get more than 2 units of jute by selling less than 3 units of cotton. The second country will also gain by the trade if it can get more than 2 units of cotton in exchange for 2 units of jute. Suppose the exchange is to take place at the rate of 2 units of jute to 2½ units of cotton. Each of the countries gains ½ units of cotton as a result of trade. Permanent international trade can then take place when the comparative ratios of costs of the two products differ in the two countries. In the first example, the ratio of costs of jute and cotton was 2 units of jute to 3 units of cotton in both the countries. Hence no trade was possible between them. In the second example, the ratio of costs was 2 units of jute to 3 units of cotton in country A, and 2 units of jute to 2 units of cotton in the second country. As the ratios of costs differ, trade can take place between them.

Law of comparative costs : The question naturally arises why do the ratios of costs differ in the two countries? The main reason for such differences is that each country is differently equipped with the supply of the factors of production. Some are rich in natural resources like gold or silver mines, coal, iron, etc., while others are deficient in such minerals. Bengal has a variety of soils and climate specially suited for the production of jute and tea; while the U.S.A. is fortunate in possessing rich, fertile cotton-growing tracts. Rich countries like England or the U S.A. possess large quantities of capital, while others like India are short in the supply of capital. The supply of factors of production is different in different countries. Hence

their relative rates of remuneration will also be different in different countries. A country which possesses an abundant supply of good land will be able to produce agricultural crops at very low costs, while another country which possesses large capital resources and a skilled labour force will produce manufactured goods at a low cost. Hence costs and prices of goods will be different in different countries. Trade between them is possible on the basis of differences in comparative costs of production. Each country will confine itself to the production of those things in which its efficiency is the highest (*i.e.*, which it can produce at lowest costs). It will export these things and import others in which its productive efficiency is the least.

To illustrate the working of this we shall start with a few assumptions. We shall, first of all, assume two countries, A and B, trading with each other in two commodities, wheat and cotton cloth. Secondly, both commodities are produced in the two countries at constant cost, *i.e.*, whatever the volume of output, cost remains the same There are, moreover, no restrictions on the movements of goods between the different countries.

The classical economists made another assumption. All costs were measured in terms of days of labour. They stated the theory in this way.

In country A,

10 days of labour	produce	20 mds. of wheat.
10 days of labour	,,	20 pairs of cotton cloth.

In country B,

10 days of labour	produce	10 mds. of wheat.
10 days of labour	,,	15 pairs of cotton cloth.

In the country A, one maund of wheat will exchange for one pair of cloth. The ratio of the costs of the two is therefore 1 : 1. In B, one maund of wheat will exchange for 1½ pairs of cloth. The ratio of the costs of the two goods in B is 1 : 1½. These ratios of costs are thus different in A and B. A will gain so long as it can obtain more than one pair of cotton cloth by sending one maund of wheat. Similarly, B would gain so long as it gets one maund of wheat by sending less than 1½ pairs of cotton cloth. Thus both would gain if A concentrates on the production of wheat

only, and exports it to B, which produces only cotton cloth. It should be noted that while the efficiency of labour in A is greater in the production of both wheat and cloth, it has comparatively a greater advantage in wheat than in cotton cloth.

Criticism of classical theory.

But this way of stating the theory has been criticised on the ground that it is based on the labour theory of value as it measures cost in terms of days of labour. But the fact that there are many different qualities of labour, and that other factors of production besides labour are necessary in making goods shows the absurdity of measuring costs in terms of days of labour. It is an anomaly to base the theory of international trade on the labour theory while discarding it in the general theory of value. It is necessary, therefore, to restate the law of comparative costs in terms of the modern theory of value.

Let us suppose that the country A possesses an abundant supply of good land, but a small supply of capital, while the country B possesses large amounts of capital, but the supply of land is relatively scarce. So in the first country, the marginal cost of producing wheat is Rs. 3 per maund; while that of producing cotton cloth is Rs. 4 per pair. In the second country the marginal costs of producing wheat and cotton cloth are Rs. 4 and Rs. 3 respectively. Tabulating these figures, we can find that

In A,	Marginal cost of producing wheat is Rs. 3 per md.
	Marginal cost of producing cloth is Rs. 4 per pair.
In B,	Marginal cost of producing wheat is Rs. 4 per md.
	,, ,, ,, cloth is Rs. 3 per pair.

The price of one maund of wheat is Rs. 3, while that of a pair of cloth is Rs. 4 in A. In other words, that combination of factors which can produce one maund of wheat can produce $\frac{3}{4}$ pair of cloth in A. One maund of wheat will, therefore, be equal in exchange-value to three-fourth of a pair of cotton cloth. Similarly in country B, one maund of wheat will sell for $1\frac{1}{3}$ pairs of cloth. The country A will then find that if it gives up the production of cloth, and concentrates on the production of wheat, it will be able to sell wheat in B, and obtain more than three-

fourth of a pair of cloth in exchange for one maund of wheat. B will find it advantageous to concentrate on the production of cotton cloth, and exchange it for the wheat of A. It will gain so long as it can get one maund of wheat by sending less than $1\frac{1}{3}$ pairs of cloth. In other words, each country will tend to export those goods made by the relatively more abundant factors, and to import other goods whose production requires the use of factors relatively scarce in that country.

Rate of exchange is determined by reciprocal demand.

The theory also takes into account the influence of demand. In the example just given, we have seen that A will gain so long it can get more than three-fourth of a pair of cloth in exchange for one maund of wheat. B will gain so long as it can obtain one maund of wheat by sending less $1\frac{1}{3}$ pairs of cloth. The actual rate at which wheat will exchange for cloth will depend on the relative elasticities of demand of the two countries for goods of the other. The rate of exchange will be such that, in equilibrium, the value of a country's exports will be equal to that of its imports. Suppose that the forces of demand are such that each country exchanges its products at the rate of one maund of wheat for one pair of cloth. As a result of an increase of demand, A wants to buy more cloth at this rate. But B's demand has remained the same. So in order to include B to buy more wheat (or to send more cloth), A must offer better terms to B. A must, therefore, lower the price of wheat to B, or offer higher prices for cloth. In other words, A must offer to send more wheat per unit of cloth in order to induce B to buy more wheat and to send more cloth than before. The ratio will then move against A. The actual terms of trade will, therefore, depend on the relative elasticities of demand of the two countries for the goods of the other.

It should be borne in mind that the doctrine does not mean that we should compare the cost of producing wheat in A and B. We cannot do that; for we do not know the actual terms of trade, and unless we know that we cannot compare cost of a commodity in both countries. The comparison is one of ratios, the ratio of costs of wheat and cotton

in B with that in A. If the two ratios are different, trade can take place between them.

So long we have discussed the theory on the basis of two commodities. But it can be easily extended to cover the case of any number of commodities and any number of countries. A country generally possesses facilities for producing a number of goods. These can be arranged in descending order of comparative advantage in the following way. A country can produce, by 10 days of labour, 30 units of cotton, 20 units of jute, 15 units of wheat, 10 units of tea and 8 units of rubber and so on. Which of these commodities will be exported or imported will depend on the terms of trade, *i.e.*, upon the rate at which it obtains the imports by sending its exported goods. The more favourable the terms of trade, the smaller will be the number of commodities it will have to export to obtain a given quantity of imports. The line separating the exports from other goods is, therefore, a moving one, depending upon the movement in the terms of trade. The introduction of several countries, instead of two, raises no difficulty. All other countries trading with India can be lumped together as one country.

This is, in short, the law of comparative costs. Its validity cannot be seriously questioned. A history of any tariff legislation will serve to bring out the essential truth in the theory. For example, Taussig[2] found striking verification of the essentials of the theory from the tariff history of the U.S.A. In the Iron and Steel Industry, though protection has been given to all kinds of manufactures, and though many of them are exported, U.S.A. still imports certain kinds of tools and machines. Similarly, in the textiles, in spite of protection, U.S.A. imports some finer piece-goods and other specialities. The reason is obvious. U.S.A. does not possess the greatest comparative advantage in their production, and hence, in spite of tariff's these are imported.

Diminishing returns and comparative costs : In the example given above, it was assumed that both commodities are produced at constant cost. Now it is necessary to remove

[2] Taussig. *International Trade*. Chap. 16. Pp. 178-196.

this assumption. Suppose that commodities are produced under conditions of diminishing returns.

In the example discussed above, we assumed that A would concentrate on the production of wheat, and exchange part of its wheat for the cloth produced in B. But as A produces more wheat to be exported to B, the marginal cost of production of wheat increases. After certain stage, A will find that further concentration on wheat production will be unprofitable. Moreover, as more and more factors are withdrawn from the production of wheat in B, its marginal cost falls. B will find that it is no longer profitable to transfer resources from the production of wheat to that of cloth to be exported to A in exchange for the latter's high-cost wheat. Hence B will retain some of its resources in the production of wheat, especially on those superior plots of land where the marginal cost of production is low. Therefore the result of the operation of the law of diminishing returns is that a commodity may be produced in both the countries. The level of rents and the margin of cultivation will depend on the terms of trade.

Gains from international trade : In the first place, the extent of gain from international trade will depend on the difference in the cost-ratios in the two countries. The more the comparative costs differ, the greater is the area in which profitable trade can be carried on. "A country gains by foreign trade if and when the traders find that there exists abroad a ratio of prices very different from that to which they are accustomed at home. They buy what to them seems cheap and sell what to them seems dear. The bigger the gap between what to them seems low points and high points, and the more important the article affected, the greater will the gain from trade be".[3] If labour is highly efficient in the production of wheat in A and also in the production of cotton in B, there is a reasonable chance that both countries' gain will be greater. The extent of gain, therefore, depends on the relative efficiency of labour in both countries. So if the efficiency of foreign labour engaged in the production of imported goods increases, we shall gain

[3] Harrod. *International Economics.* P. 34.

considerably; but if efficiency increases in the production of goods we export, we shall lose.

Secondly, the extent of gain also depends on *the terms of trade, i.e.,* the ratio at which wheat is exchanged for cotton cloth. If the ratio is 1, to 1, B will gain in a greater degree. For left to itself, it gets 1 md. of wheat in exchange for 1⅓ pairs of cloth. But now by trade, it is getting one maund of wheat by selling one pair of cloth and is gaining one-third pair of cloth. In A, if there were no trade, one maund of wheat would have to be given in exchange for three-fourth of a pair of cloth. But now it gets one pair of cloth. A therefore gains one-fourth of a pair of cloth. But if the ratio was one maund of wheat to one and one-fourth pairs of cloth, B would have gained one-twelfth of a pair of cloth, and A half a pair. Much depends, therefore, on the terms of trade.

The extent of the gain depends on terms of trade.

The term of trade will depend on the *play of reciprocal demand, i.e.,* on the elasticity of A's demand for cotton and on B's demand for wheat. If A's demand is highly inelastic, it will be willing to pay more wheat to get a given quantity of cotton. The terms of trade will move against it. But if A's demand is highly elastic, the terms of trade will tend to move in its favour. Similarly, if B's demand is inelastic, the terms of trade will go against B or in favour of A. To take an illustration, suppose the terms of trade are one maund of wheat and one pair of cloth. A change in demand sets in A, which wants more cloth at this ratio. But nothing has happened to change the demand-schedule of B for wheat at the existing rate. In order to get more cloth A must offer more tempting terms to B. The term of trade will move against A. But how far it will depend on the elasticity of B's demand for wheat. If B's demand is elastic, it will be willing to accept more wheat at a slightly lower price and hence to send more cloth. The rate of exchange will move slightly against A. But if B's demand is inelastic, the concession must be greater to induce B to accept more wheat and to send more cloth. The terms of trade will move in a greater degree against

Terms of trade and gain depend on reciprocal demand.

A. That country will gain most from trade whose goods are in high demand abroad, but which possesses a low demand for foreign goods. In technical language, its demand for foreign goods must be highly elastic while the foreign country's demand for its goods is highly inelastic. The term of trade will then move in its favour.

The level of money incomes will be an indication and the source through which this gain will be shared. A country whose goods are in constant demand abroad will have a high level of money incomes. If the foreigner's demand for its exports is high, the export industries will conduct a prosperous trade and the level of wages will also be high in those industries. Owing to competition, other industries must also pay the same high rate to the labourers ; otherwise the latter will shift to the export industries. Thus the general level of money wages will be high in that country. But though the level of money incomes is high, the prices of foreign goods will be low and the people will gain as consumers of foreign goods. Similarly, a country whose demand for foreign products is very high will have low money incomes. The prices of foreign products will however be high and it will lose as consumers of imports.

Wages and international trade : What is the effect on international trade of different levels of wages prevalent in different countries? It is a common notion with popular writers, especially with protectionists, that a country with high wages will be undersold all round by a country with low wages. The notion springs from the belief that because the general level of wages is high, the costs of production and the prices within the country must also be high, and it will be unable to compete with countries where wages, costs and prices are lower.

Can a country with high level of wages be undersold all round?

That this attitude is highly confusing can be shown both by theoretical reasoning and actual course of trade. High wages do not always mean high costs. If the productivity of labour is also high, *i.e.*, if labour produces more goods, the cost per unit may actually be lower. So prices may also be low. On the other hand, low wages may be due to low productivity, and so costs and prices may actually be high.

A general level of high wages can only be maintained if the productivity of labour is also very high. Hence a country with high money wages cannot be undersold all round by another with low wages.

The actual course of trade bears out the truth of this assertion. The English workers are generally paid at a higher rate than Indian labourers. Yet England has steadily exported goods to India. The United States is, by common consent, a country with a high level of wages. Yet it is exporting a considerable volume of goods to all other countries.

On the other hand, a country may have a high level of wages because its goods are much sought after by other countries. That is, the terms of trade may be favourable to it, and as a result, its level of wages may be high. Thus, instead of the high money wages being a bar to export trade, they may be an indication of a prosperous export trade, and a mechanism through which the prosperity is enjoyed by the country.

If labour is highly efficient in the dominant industries, a high general rate of wages will be established in the country. When once the high rate is established, any particular industry may find in that high rate a handicap. For though by competition it will be forced to pay the prevailing high rate labour may not be as effective there as in the dominant industries. That country will cease to produce those things because its comparative advantages are not the greatest. If, in any industry, any grade of labour is paid a very low rate of wages, it will tend to export those goods in which that labour is used. But if all wages are lower or higher, that would not affect the course of international trade.

Non-competing groups and international trade : In the theory of international trade, we have assumed that within a country, labour is reasonably mobile, and relative rates of wages are adjusted to relative efficiencies of different groups of labourers. If 10 days of labour produce 30 mds. of wheat and 15 mds. of rice, labourers engaged in wheat production and in rice production

• Does the presence of non-competing groups modify the course of trade?

would get wages in the ratio of 2 to 1. We assume that such is the fact. But suppose that owing to the presence of non-competing groups, a particular group of labourers is getting either higher or lower wages than the prevailing rate for labour of the same efficiency. How will the course of international trade be affected by the presence of these non-competing groups?

If, owing to the absence of mobility, any group of labourers are in receipt of very low wages, that country will possess a comparative advantage in the production of those goods in which that group of labour is employed. The money cost of its production will be lower than elsewhere. In such circumstances, those goods will tend to be exported, and the course of international trade will be affected. Such was the situation in the chemical industries of Germany before 1914. Because of the spread of scientific education, the number of chemists in Germany was very large and they were, therefore, forced to accept low wages. The prevalence of this low level of wages for chemists gave Germany a comparative advantage in the production of chemical goods which were steadily exported.

But, if, in other countries also, there were similar groups of labourers (for example, chemists) receiving low wages, the comparative advantage of the first country due to lower money wages will be met by similar advantages of other countries. Relatively, therefore, the position of no country will be worse or better in terms of money cost. And the course of trade will be determined as before by the comparative efficiencies of production. Thus, if various non-competing groups are in the same relative position in different countries, their presence would not seriously modify the course of trade. But, if the relative positions of different groups are different in two countries,—for example, if chemists as a group receive lower wages in Germany and higher wages in the U.S.A.—the course of trade would be affected. "But in fact, the phenomena of social stratifications are not widely divergent. Non-competing groups on the whole are arranged in the same series of grades in different countries".[4] Hence the course of international trade will

[4] Taussig. *Principles,* Vol. II.

not be materially affected by the presence of non-competing groups of labourers.

The protectionist controversy : The protectionist controversy is as old as economic theory. The desire to protect oneself against foreign competition has always been present in one form or other. At heart, we are all protectionist and would not like competition in any sphere of life, much less from the 'detestable' foreigners. Though a much discussed topic, there is still some hazy thinking around this old question of Protection *vs.* Free Trade. The next section will therefore be devoted to a consideration of this problem.

Free trade : Free trade means simply freedom of international trade. It connotes an absence of any artificial impediment or restriction on the course of trade that would naturally follow between nations.

Free trade is the natural corollary of the law of comparative costs,—nay, of the division of labour itself. Foreign trade is like domestic trade ; the free each is, the greater will be the gain of both the parties. Just as because of the freedom of internal trade, a person is able to buy in the cheapest market and sell in the dearest, so free international trade will ensure that a country will buy in the cheapest market. The *rationale* of free trade depends on two propositions. *First,* the labour and capital of a country, if not hindered by government regulations, would tend to flow to those industries where they can be applied to the greatest advantage. *Secondly,* the total production of the world and of any individual country will be maximised if each country applies its capital and labour to those industries in which it possesses the greatest comparative advantage and then exchanges these products for articles which it cannot produce as cheaply as other countries. In the long run, therefore, each will gain under freedom of trade. "The fact of trade establishes an overwhelming presumption that the commodities obtained from abroad in exchange for exports are so obtained at lower cost than that which the domestic production of their equivalent would entail. If this were not the case they would not be imported, even under Free Trade".[5] The *third*

[5] Viner. "The Tariff Question and the Economist." Quoted in Beveridge. *Tariffs.* p. 15.

proposition in favour of free trade is based on the defects of protectionist arguments.

Protection : The theory of protection implies that domestic industries are to be sheltered against foreign competition by government regulation. Protection may be given in a variety of ways, of which the two most notable ones are the imposition of duties on foreign goods and the payment of bounties to domestic industries. Leaving aside the question which one of them is better, we shall now discuss the proposition whether the policy of protection is at all good.

Arguments for protection : Most of the pleas for protection are coloured by prejudice rather than by reason, by non-economic considerations rather than by strictly economic arguments. Many of them are, therefore, easily refuted. We shall try to review them one by one.

'Keeping money at home.'

The most common argument is that of *"keeping money at home."* "When we buy manufactured goods abroad, we get the goods and the foreigner gets the money. When we buy the manufactured goods at home we get both the goods and the money." This famous saying of Robert Ingersoll, often wrongly attributed to Lincoln, provides one of the most popular arguments for protection. The implications of this policy are never candidly faced. We buy from the foreigner instead of from the home producer, because the former is offering goods at lower prices. Buying from home producers would mean buying in the dearer market. As consumers, therefore, we would suffer. We may, of course, agree to undergo this loss for the sake of other considerations. But that is a separate question, and ought to have been made clear.

Balance of trade argument.

The next argument is the famous *balance of trade argument*. It is an old mercantilist idea that the object of foreign trade was to amass bullion. And for this purpose exports should be encouraged and imports checked so that other countries are forced to send gold to our country. It is obvious that if all countries simultaneously followed this idea, none would gain.

If everybody becomes anxious to sell, and nobody to buy where would we all be? Money or gold is not wealth. Our prosperity depends, not on the amount of gold in our possession, but on the facilities for obtaining goods at cheapest prices. And international trade is the agency through which we get goods at cheapest rates. Moreover, in the long run, exports and imports must balance, and no country can go on exporting while shutting out imports.

Home market argument.

Next comes the *home market argument,* mostly used in American tariff controversy. It is a corollary to the idea of "keeping money at home." Protection would increase the number of persons engaged in protected industries and they would provide a good market for the products of other industries. But protection, by curtailing imports, would lead to a decrease in exports, and protected industries would, therefore, gain a home market, while the export industries lose a foreign market.

Wages argument.

The *wages argument* comes next. It is claimed that a country with high money wages woud be undersold by another with low wages. Hence the former country must be protected against the latter. The fallacy of this line of reasoning has already been pointed out. Another form of this argument is that protection would tend to make wages high. As a result of the tariff, imports will be checked ; gold will flow into the country and its price level will rise. Money wages would also rise. But because of the rise in prices the real wages would actually be lower. High wages are the results of high productivity. Whatever lessens the productive efficiency of the country would lessen wages. Protection, by diverting labour and capital from the most profitable industries, would lower "general productivity, general prosperity, general wages."

Protection is often advocated for *"equalising the cost of production"* of home and foreign countries. If domestic costs are higher than foreign costs by (say) 10 per cent, impose a duty of 10 per cent on imports. Thus place both on the same footing, and let them compete on equal terms. This argument has "an engaging appearance of fairness".

But strictly followed, it would mean that the higher the domestic costs, the higher must be the duty. In other words, the least efficient industry would secure the highest protection. Carried to its logical conclusion, it would mean the annihilation of all trade; for international trade depends on the comparative differences in costs.

Infant industries argument.

The really serious argument for protection is the *infant industries argument* first stated by List. The central idea is embodied in the saying: "Nurse the baby, protect the child, free the adult." A country may possess great natural advantages for the development of particular industries. But owing to the competition of well-established foreign rivals, it may be difficult for those industries to grow up. Beginnings are always difficult. If, during the initial stages, these infants are sheltered against foreign competition, they may eventually be able to grow to full stature and face the world with confidence. Protection, though it will inflict losses for the time being, will ultimately prove beneficial owing to the successful development of these industries. The theoretical validity of this argument is not denied by free traders. But this would justify the levy of *temporary* protective duties. Protection, however, tends to become permanent. "The infant industries never feel themselves grown up; if they grow up at all they devote their manly strength to fighting for bigger and longer protection".[6]

Protection is also advocated with a view to *diversify industries* in a country. Such diversification of industries is advocated on several grounds. *First,* it would lead to national self-sufficiency—an argument of great military significance. *Secondly,* a large number of occupations will lead to an all-sided utilisation of the physical and mental faculties of the people. *Lastly,* diversification of industries is advocated on the ground that it would enable a country to avoid the risk of depending on a single industry or a group of industries. A country, like an individual, should not put all its eggs in one basket. These arguments are mostly non-economic. National self-sufficiency may be a necessary

[6] Beveridge, *Tariffs,* p. 103.

on grounds of defence. Defence is, of course, greater than opulence. But here we agree to undergo losses for the sake of military safety, and that is a separate question. Moreover, the argument about the diversification of industries misses the real point. Increase of employment does not mean that prosperity will be increased. "The goal of economic effort is not employment, but wealth." Protection by diverting labour and capital to less productive uses will decrease general productivity and general prosperity.

Dumping and protection.

The legitimacy of giving protection against the *dumping* of goods by foreign countries is admitted by most free traders. Such dumping means unfair competition and it disorganises domestic industries. But if dumping is permanent, no objection should be made against it. But most dumping is sporadic, *i.e.,* for temporary periods. There is no doubt that such dumping is injurious to domestic industries, and it is perfectly justifiable to levy anti-dumping duties against such dumping. But since dumping is temporary the duties should also be temporary. It is, however, the universal experience that protective duties, once levied, are seldom taken off. And "permanent tariffs, in the long run, are as certainly an impoverishment of the countries which they hold apart as are frozen seas or rockbound coasts."

The political evils are no less serious. The protected industries, instead of turning their attention to improving their organization, apply their energies and money to bribe legislators into passing tariff laws. Tariffs, therefore, grow like snow-balls and corrupt the body politic. Once levied, they are not easily taken off and they remain a permanent burden upon the country. Most of the familiar arguments for protection are hopelessly wrong. They find a happy breeding ground in the dark recesses of the prejudices of economic nationalism.

Protection and unemployment : Protection has often been advocated as a cure for unemployment. The restriction of foreign imports will lead to the expansion of domestic industries. The result will be that more unemployed people will be absorbed in those industries. But it is often forgotten that a restriction of imports would ultimately lead to a

restriction of exports. So while employment may increase in the protected industries, there will be unemployment in the export industries. Hence there may be no net increase in employment.

In recent times, Keynes suggested two ways in which protective duties might be expected to result in a net increase of employment if the volume of exports could be maintained at the old level. *First,* if the country levying the protective duties advances more loans to foreign countries, its exports can be maintained at the old level, and so the increase in employment in the expanding domestic industries will not be offset by unemployment in the export industries. *Secondly,* exports can be maintained at the old level, if bounties are given to exports from the proceeds of import duties.

As regards the first method, of course it is true that exports can be maintained by increased lending to foreign countries. But then a substantial part of the capital resources of the home country would be diverted to foreign lands. This might result in a diminution of home investment. Moreover, such a policy would not be a wise one. Restriction of imports from foreign countries will mean that we are curtailing their ability to sell goods. This will result in a diminution of their prosperity. Would it be a wise policy to advance more loans to such countries? As regards the second method, a general export bounty would only result in retaliation by other countries which would take steps to levy anti-dumping duties. There is very little chance of maintaining the volume of exports by those methods. Thus while it may be possible to build up a case for protection as a cure for unemployment, such schemes are not practicable in real life.

If we study the real causes of unemployment, we shall see that tariffs cannot be expected to remove any of those causes. Unemployment may be due to first seasonal fluctuations in trade and industry. No one claims that these are removable by means of tariffs. Secondly, it may be due to the cyclical fluctuations of the industry. Trade cycles are an important factor causing unemployment. But they are not remediable by protection. Heavy protection has not enabled America to escape the ravages of the last trade

depression. Thirdly, it may also be due to the changes in the industrial structure consequent on the adoption of new inventions and newer methods of production. Production is clearly unavailable as an instrument to stop the wheels of progress, nor is it desirable that it should be adopted. Lastly, it may also be due to the immobility of labour, or to the fact that the level of wages is maintained at a higher level in the country. Under such circumstances, "greater flexibility and detailed readjustment of wages are needed rather than a concealed attack on wages, through rising prices." Protection will not go to the root of the trouble but will accept and perpetuate the rigidities from which the trouble is coming.

CHAPTER XLIII

FOREIGN EXCHANGE

What is foreign exchange? The term, 'foreign exchange' is used in a variety of senses. Sometimes, it is used to mean bills of exchange, banker's drafts, etc., payable in a foreign centre. In German language, this is denoted by the expression, 'devisen.' It is also used to mean the actual rates of exchange; for example, when it is said that the foreign exchange is favourable. It also refers to the mechanism, or the ways and the means by which the payments in connection with international trade are transacted. We shall use the term in this sense. Just as in the domestic transactions, cheques are used, so in the international payments, bills of exchange and banker's drafts are used.

How payments are made? Payments in international trade are generally made through bills of exchange and banker's drafts. A bill of exchange is an order drawn by a person upon a bank or another person, asking the latter to make certain payments to a third party. Suppose an Indian jute merchant *A* has exported jute of the value of Rs. 1,000 to an English merchant *B*. Also another Indian merchant *C* has imported textiles of the value of Rs. 1,000 from *D*, an English merchant. If the transactions are settled by *B* sending gold to *A* and by *C* sending gold to *D*, that would mean double expenditure in the cost of carriage. But suppose the Indian exporter draws a bill on the English importer and sells it to the Indian importer. The Indian importer, in his turn, buys the bill and sends it to the English exporter who presents it to the English importer and receives payments from him. Thus without any movement of money, the two debts are settled by a bill. This is the way by which bills are used to finance foreign trade. In recent times, the use of bills is decreasing, and settlements are now made by means of *banker's drafts or cable transfers* (in the case of urgent payments). The importer goes to a bank, buys a draft and

Operation of a bill of exchange.

sends it to the exporter. The latter presents it for payment to the foreign branch or agent of the bank.

Bills may be "sight" bills, or "long" bills. A *sight* bill is a bill payable at sight, *i.e.*, on presentation. A *long* bill is payable after a certain period, mostly 90 days after presentation. If the importer, or an accepting house on his behalf writes "accepted" on the face of the bill and signs his name the bill is said to be "accepted." The acceptor then becomes liable for paying the bill. If the bill is sold in the money market, it is said to be "discounted." The seller receives the face value of the bill *less* the interest at an agreed rate for the currency of the bill.

Balance of trade and balance of payments : It is necessary to know the items for which payments are likely to be made to, or received from a foreign country. First of all, a country has to pay to others on account of the goods it has bought from them, *i.e.*, on account of imported goods. It will also receive payment from other countries on account of goods it has exported to them. In addition to goods, a country also exports or imports services. These consist chiefly of shipping, banking and insurance services. If we utilise the services of foreign shipping, foreign banks or insurance companies, we shall have to pay to these countries for the service rendered by them and *vice versa.* These constitute the second item in the balance of payments. Thirdly, we would include the expenditure incurred by tourists in our country and by us in foreign countries. When American tourists travel through India, we are exporting the goods (consumed by them) and the sights (enjoyed by them), and so shall receive payment from them. On the other hand, when Indians are touring in foreign lands, we have to pay to these countries. Fourthly, there are also miscellaneous items of payments *e.g.,* charitable contributions made by one country to another, immigrant's remittances, etc. India has also to pay large sums to England to meet the expenses incurred by the Indian students in England. Tributes, indemnities or reparations made by one country to another often give rise to the necessity of making large payments. Fifthly, if a country has invested large sums of money in foreign lands it will receive interest payments from them

year after year. Conversely, a borrowing country will have to pay interest to lenders in foreign countries. Sixthly, a country will have to pay to another country immediately if it has granted loans to it as it will have to transfer the loan. A borrowing country will have to transfer large sums of money to lenders at the time of repayment of loans. Lastly, a country will receive payments from others if it has succeeded in selling its own securities to foreign nationals. Conversely, it will have to pay if its own nationals have purchased securities of foreign countries.

A complete list of these items on both sides is called the *balance of accounts,* or *the balance of international indebtedness.* Various other classifications have been applied to these items. The most common classification is to divide them into visible and invisible items. The *visible balance* consists only of goods that are exported or imported. The other items are regarded as *invisible.* The visible balance of exported and imported goods is sometimes known as the *balance of trade.* This balance is regarded as *favourable* when the value of exported goods exceeds that of imported goods. This expression is a relic of mercantilist days when an excess of exports was considered favourable as it brought gold from foreign countries. So an excess of imported goods over exports was regarded as *unfavourable* as then the country would have to send gold to pay for the excess. But a favourable balance of trade does not always indicate that the country will get gold from others. It may simply mean that it is a debtor to others on other items in the balance of payments. It may be a borrowing country, and so has to pay large sums to others in interest ; or it may be using the services of foreigners in banking, shipping, etc. So it has send excess quantities of goods to others to pay for these items.

In what sense is it true to say that exports pay for imports?

Equality of exports and imports : While the balance of trade of a country may thus be favourable or unfavourable, its balance of payments cannot be so. If a complete account of all items of payment made and received by a country is carefully prepared, all items must balance one another. In the case of an individual, the income and

expenditure must balance during a given period. If, however, his expenditure exceeds income, then he must either be drawing upon his previous savings, or borrowing from others. If this income exceeds his expenditure, then he is saving. In any case, his income *plus* or *minus* loans or savings must be equal to his expenditure. Similarly in the case of a country. If the payments received by a country from others exceed (or fall short of) payments it makes to them, then it must be accumulating (or drawing upon) balances in foreign countries. In other words it is lending (or borrowing or drawing upon previously accumulated) balances to these countries. So its other receipts plus or minus loans or savings must be equal to its payments.

It is in this sense that we say that exports of a country must be equal to its imports. Exports of goods may exceed or fall short of imports. This fact of a favourable or unfavourable balance of trade does not falsify that statement. If exports and imports include all items in the balance of payments including not only goods, but such items as services of various kinds, loans, tourist expenses, charitable payments, indemnities, etc., then all these items must balance one another.

How does the balance of payments always balance itself? Suppose that a country's receipts from others exceed its payments. The individuals of that country who will receive foreign payments sell foreign currency to their banks, and receive local money in exchange. After the transactions are complete, what will happen is this that banks of the country will accumulate larger balances in foreign countries. If they keep these balances in foreign centres, they will be lending money to the latter. In any case, its receipts (including the loans) will be equal to its payments. The balance sheet still balances. If banks withdraw their balances from foreign countries, the latter will send gold to the former. Gold will move into that country. The reserves of banks increase. So they lend more money in the market, and lower the rates of interest. This stimulates investment and causes an increase in money incomes. Prices will rise in that country. Because

of higher prices, its exports will decline, while imports will increase. Uultimately the two will thus balance.

How is the rate of exchange determined? The rate of exchange is the ratio at which the domestic currency can be exchanged against foreign currency. The actual rate of exchange is determined under stable currency conditions by the demand for and the supply of foreign currency. The latter is in its turn dependent on the balance of indebtedness. Hence it is argued that the actual rate of exchange is determined by the balance of indebtedness of a country. If the balance is unfavourable, *i.e.*, if the country imports more than it exports, the demand for foreign currency will increase, and the rate of exchange will fall. And the converse happens when the balance becomes favourable. This is known as the *Balance of Trade Theory*. That the immediate influence determining the rate of exchange is the balance of payments no body would deny. But this furnishes only a very superficial explanation. Why is the volume of exports and imports so much and not more? Why does the balance become favourable at one time and unfavourable at another? In other words, what are the forces determining the balanec of trade and therefore the exchanges? So the theory of foreign exchange should explain the causes which determine the balance of payments. Moreover, the balance of payments is often the result rather than the cause of exchange rates. In cases of paper standard, first, the rates of exchange move and then the latter influence suitable changes in the balance of trade. The theory, therefore, cannot find out the real causes determining rates of exchange.

The rate of exchange is a function of price-levels.

Purchasing power parity theory : Rediscovered rather than invented, the theory has been popularised during the inter-war period by Gustav Cassel, the Swedish economist. According to this theory, rates of exchange between two countries are determined by relative price-levels. The actual rate of exchange must be such that the same amount of purchasing power, when exchanged at that rate, must buy the same amount of goods and services in both the countries. If, by spending Rs. 15/- we can buy the same amount of goods in India as we can buy with £1 in

England, the rate of exchange between England and India will be Rs. 15 to £1, *i.e.,* 1*s.* 4*d.* per rupee. "This is easily seen if we reflect on the fact that the price paid in a foreign currency is ultimately a price for foreign commodities, a price which must stand in a certain relation to the prices of commodities on the home market. Thus we arrive at the conclusion that the rate of exchange between two currencies must stand essentially on the quotient of the internal purchasing powers of these currencies".[1]

The rate of exchange determined in relation to price-levels is known as the "Purchasing Power Parity." This is a norm round which actually rates of exchange will vary. So long as the relationship between the two price-levels remains unchanged, the rates of exchange will tend towards the parity. But it should be noted that this parity is not a fixed par like the gold points. It is a moving par,—changing with changes in price-levels.

But it is usual for price-levels of different countries to remain at different levels. Hence it is difficult to compare the general price-levels of the countries without assuming a standard or a base year. 1913 is generally taken as the base year. The relationship between the different price-levels and the rates of exchange in that year are taken as normal. If the relationship between the two price-levels changes, the rates of exchange will also change in the same proportion. As an illustration, let us assume that the index-number of prices in the U.S.A. was one and half times greater than that in England in 1913, and that the rate of exchange was 4·8 dollars to the pound. Suppose in 1914 the price-level in England has doubled, that of the U.S.A. remaining the same. The rate of exchange will be 2·4 dollars to one pound. The value of the pound in terms of dollars will be halved as the English price-level has doubled while American prices are the same.

It should be noted that the purchasing power parity is determined by comparing the general price-levels and not the price-levels of internationally traded goods. The prices of exports and imports must remain at the same level in

[1] Cassel, "Foreign Exchanges." Article in the *Encyclopædia Britannica,* 13 Ed., First Supplementary Volume, p. 1086.

every country (barring, of course, cost of transport, tariffs, etc.) Moreover, they are often the result of changes in exchange rates. Hence it is easy to verify the theory by comparing the wholesale standards. The prestige and the so-called verifications of the theory from a comparison of the existing wholesale index numbers are due to the fact that the latter are overloaded with internationally traded goods.[2] But the parities should be "measured only by general index figures representing as far as possible the whole mass of commodities marketed in the country." When this is done, the actual rates of exchange will not always be the same as the parities thus determined. In the short period, prices of domestic goods may move in a different direction from the prices of foreign traded goods. And actual exchange rates will not conform to the parities. Moreover, many items of the balance of payments, *e.g.*, insurance and banking transactions, capital movements, etc., are affected very slightly at all by changes in the general price-levels. But they influence the exchange-rates and their influence may drive the rates in a different way from those shown by a comparison of the index numbers. They are important determinants of the exchange rate, but in Cassel's theory their operations are neglected.[3]

The theory is really an explanation of monetary adjustment, and states that if the essential conditions of international trade remain unchanged, foreign exchange rates will reflect these price-changes. But the conditions of international trade never remain the same. In particular, the barter terms of trade are constantly changing owing to changes in the demand for foreign goods, changes in the conditions of supply of exported goods, changes in the volume of foreign loans, changes in the costs of transport and in every item in the invisible balance of trade. Let us take the case of a country which borrows from another. The increased supply of the foreign currency in the first country's foreign exchange market will raise the value of its own currency in terms of the currency of the lending country. This change in the exchange rates will not always be reflected

[2] Keynes. *Treatise on Money.* Vol. I, p. 73.
[3] Ohlin. *Inter-regional and International Trade,* p. 545.

in suitable changes in the price-levels of the two countries. If the barter terms of trade change, the relationships between the price-levels of different countries will change, and the parties determined by comparing the former price-level relationship will fail to reflect changes in exchange-rates. The theory is thus true only under circumstances when the terms of trade do not change.

Fluctuations of the rates of exchange : The actual rates of exchange fluctuate above and below the mint par. What are the causes which influence the movements of the rates of exchange? They may be grouped under two main heads ; —the demand and supply of foreign currency, and the currency conditions. The demand and supply of foreign currency arises from three sources:—(1) *Trade conditions,* (2) *Stock Exchange influences* and (3) *Banking influences.*

Trade conditions.

(1) The demand and supply of foreign currency are dependent primarily on the volume of exports and imports. When exports are greater than imports, foreigners owe to us a greater sum than we owe to them. The rate of exchange moves in our favour. Conversely, when imports are greater than exports, the demand for foreign currency is greater than the supply and the rate will fall. Among exports and imports, we must include not only goods, but the invisible items, because these also give rise to the demand for and the supply of foreign currency.

Stock Exchange influences.

(2) Stock Exchange influences include the payment of loans, interest, and repayment of loans, the purchase or sale of foreign securities by home investors, or of home securities by foreign investors. When a country gives loans to another, the loans have to be transferred into the foreign currency. Its demand for foreign currency increases, and the rate of exchange moves against it. Similarly, when home investors buy foreign securities, or home securities are sold by foreigners, the rate falls. But when loans are being repaid ; or when foreigners buy domestic securities, the demand for home currency on their part rises, and the rate of exchange rises.

(3) Banking influences include the purchase and sale of banker's drafts, traveller's letters of credit, arbitrage operations, etc. When a bank issues a draft or a letter of credit, etc., on a foreign branch, the demand for foreign currency rises, and the rate of exchange falls. Bank rate is also an important influence on the rates of exchange. When it is high (*i.e.*, in relation to other countries), foreigners will send funds to that country to earn the high rate of interest. The demand for home currency rises and the rate of exchange moves up. Opposite happens when the bank rate is lowered.

Banking influences.

Currency condition. The conditions of currency in a country also exercise important influence on the rates of exchange. If there is a chance that the currency will depreciate, due to (say) an over-issue of paper money, the demand for that currency will fall off, since nobody wants to transfer his funds into a currency whose purchasing power is depreciating. The rate of exchange will therefore rise, and may jump up to abnormally high figures if there is a "flight from the foreign currency," *i.e.*, if foreigners, not liking to invest their funds in their home currency, hasten to transfer them to foreign countries where purchasing power is more stable. Similarly, when the currency of one country is based on silver and another on gold, the rates of exchange will depend on the gold price of silver. Besides these, many other causes influence the rates of exchange, *viz.*, the political conditions, the growth of speculative sentiment, etc.

Currency conditions.

Limits to the fluctuations of exchange : When both the countries are on gold standard, the actual rates of exchange will fluctuate around the mint par of exchange within limits fixed by the gold points. The *mint par* is determined by the amount of pure gold in the coins of each country. One gold sovereign, for example, contained as much pure gold as 4·86 dollars in pre-war days. The mint par between England and America was therefore 4·86 dollars to the pound. The rate of exchange is said to be at par when it is the same as the mint par. The rate of exchange will however fluctuate above and below the mint par. The

Limits under gold standard.

limits to the fluctuations in the rates of exchange are fixed under gold standard by the *gold* or *specie points*. Though by sending one gold sovereign, one could have obtained 4·86 dollars, there were certain expenses in connection with the shipping of gold. In addition to the trouble of sending, the gold exporter would have to pay charges for freight, insurance, etc., and would lose interest during the period of transport. The actual sum to be paid on account of these charges may often be considerable. The actual *gold export point* is therefore determined by adding the shipping expenses, etc., to the mint par. Similarly, the *gold import point* is found by subtracting the shipping expenses from the par. The merchants will buy bills in order to make payments to foreign countries, so long as the price of bills is within the gold points. But if the price of bills is higher than the gold export point, they will send gold instead of sending bills. Similarly, when the rate of exchange touches the import point, gold will be imported. Unlike the mint par which is stable so long as the gold contents and the fineness of the coins are not changed, gold points are variable according as the cost of freight, insurance, etc., increase or decrease. In recent times, owing to the development of aeroplane transport, the time taken to send gold has been shortened. So some saving is made on account of interest. Moreover, the freight, and insurance charges are not higher. Hence the gold points have become narrower.

A country is said to have *favourable exchange* when the rate of exchange is near the gold import point; it has *unfavourable exchange* when the rate is near gold export point. When we have imported more and exported less we shall have to pay the foreigners for the imports by sending gold or other funds. The exchange is then said to be unfavourable. Conversely, when our exports are greater than our imports the foreigners must pay us by sending gold. The exchange is then said to be favourable.

Limits under paper currency standard.

When both the countries are on inconvertible paper currency, there are no gold points. The mint par is replaced by the purchasing power parity, determined with reference to the price levels of the two countries. Unlike the mint

par, the purchasing power parity is a moving par, changing in response to every change in the prices. Though there is an par of exchange, there are, however, no limits to the fluctuations in the rates of exchange. The latter will fluctuate in accordance with every change in the demand and supply of foreign currency.

Loan payments in international trade : Following Cairnes, we may divide the loan transactions into three periods:—first when the loan is being transferred, second when interest is being paid, and third when the loan is being repaid. Let us suppose that England has advanced loans to the U.S.A. At the time of negotiation, the exports and imports of each country balanced and the foreign exchange was at par. In this situation, the loan negotiation has been concluded. If the whole of the loan is spent in England in purchasing goods, the value of its exports will go up by the amount of the loan. Exports will increase directly and the loan will be transferred through movements of goods. But if the whole amount of the loan is not so spent, England would have to transfer the sum to the U.S.A. and for this purpose the demand for dollars in terms of sterling will rise. The value of sterling in terms of dollar will fall and the exchange will touch the gold export point. Gold will move out of England. Owing to the depletion of the gold reserves, the Bank of England would raise its bank rate and would thus inaugurate a period of credit contraction. Prices and money incomes would decrease. The fall in prices would stimulate the volume of exports from England. As a result of these two movements, the balance of trade would become favourable to England and the loans would be paid through increased exports. In the long run, therefore, exports of England would be greater than imports, the prices and money incomes would be lower. The opposite will happen in the U.S.A. Its imports will be greater than exports; prices and money incomes will also be higher. When interest would have to be paid, the borrowing country will tend to develop an excess of exports over imports. During the third stage when it will have to repay the loans, the mechanism will now be reversed. The U.S.A. will now tend to develop an excess of exports over imports, prices and money incomes

will fall. The opposite will happen in the case of England which will have a visible unfavourable balance and a higher level of prices and money incomes. This is the neo-classical analysis regarding the mechanism of transfer of one-sided payments made by one country to another. According to this analysis (known as the price-specie-flow mechanism), the loan or any payment made by one country to another will be transferred in the form of an excess of exports from the paying country. This excess of exports will develop as a result of a fall in the prices in that country. But in recent times Ohlin and other economists have expressed doubts about the validity of this analysis. Loans are of course transferred through an excess of exports over imports. But this export surplus tends to develop, not because of changes in prices, but because of changes in the purchasing power of the two countries. When England grants a loan to India, this fact causes a fall in the buying power of the people of England, and a rise in that of Indians. This is clearly obvious. When A borrows money his buying power increases, while that of his creditor decreases. Since the buying power of Englishmen decreases, they will purchase a smaller amount of goods than before, including smaller imported goods. Imports into England will tend to decline, while a large portion of domestic goods will be available for exports. Then Indians will purchase larger quantities of goods as they now possess more buying power. So they will purchase more imported goods at existing prices, a large part of which may come from England. In this way, England will tend to develop an export surplus sufficient to transfer the loan. It is not necessary that prices should fall in England, or rise in India. A change in the buying powers, consequent on the granting of the loan, is a sufficient condition for the emergence of the export surplus by the lending country.[4]

The truth probably lies in a middle position. There is no doubt that the payment of the loan causes a change in the buying powers (*i.e.*, a change in demand), and this will give rise to some amount of export surplus. There have also occurred on many occasions some shifts in the prices in the

[4] For further Discussion. See Ch. 51.

two countries which have facilitated the transfer of payments from one country to another.

Exchange depreciation and exports : It has been claimed that the depreciation in the exchange rates of a country would give a bounty to its exports. As a result of the fall in the rates of exchange, the producers of exported goods receive more money by selling their goods in the foreign markets. Their costs in the form of wages do not rise at once, or do not rise as much as their receipts do. They thus get an extra profit, a bounty. Thus so long as the internal prices and costs do not rise by the same percentage as the fall in the rates of exchange, this will give a stimulus to exports.

But exchange depreciation may follow the internal rise in prices. The fall in the rates of exchange may be less than the rise in internal prices. There will then ensure a bounty to imports, and exports may be checked. As Taussig has pointed out, "the events may take the opposite course. Exchange may rise less than prices.... There is nothing in a-priori reasoning and nothing in the history of paper money to lead to a presumption that the exchange will rise faster or slower, more or less than prices." Exchange depreciation does not in itself lead to such rates of foreign exchange as will give a bounty to either exports or imports.

Depreciation of the exchanges does not always lead to a bounty on exports. If foreigners' demand for the exports of the country is comparatively inelastic a fall in export prices abroad may lead to a fall in the total revenue from exports.[5]

There are certainly occasions when depreciating exchanges may give rise to a bounty to exports. If, as in Germany during 1919-1924, the government issues large quantities of paper money and uses them to make remittances to foreign countries, the rates of exchange may move faster than prices. Harris has found, in his study of exchange depreciation after 1931, that "statistical material gives support to the position that paper countries gained an export advantage."

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[5] Lerner, *Economics of Control,* p. 378.

But it should be noted that such stimulus is only temporary. Sooner or later, prices and costs will move in the same proportion with the rates of exchange, and the bounty will disappear. The producers of exported goods will not enjoy the bounty indefinitely, as compared with other home producers. Some of the latter will transfer to the export industries. Exports will increase, and with them, the exchange rates will go down. The more rapidly will the exports increase, the sooner will the bounty vanish.

Other factors must also be taken into consideration. As Harris has pointed out, "economic conditions abroad may play an important part. It is in fact necessary to study the supply and demand conditions of each commodity. The demand for some may be elastic, and for others inelastic. Furthermore, important shifts in demand will occur. Upon these and others will depend whether or not any particular country's exports will expand."[6] Moreover, such stimulus may not appear during the period when the exchanges are depreciating. Anticipating further depreciation, foreigners may at first postpone further purchases from the country with depreciating exchanges. If imported raw materials are used largely in the production of exported goods, the increased cost of the imports may offset the export advantage. Lastly, devaluation of the currency is a game which can be played by every country. If the other countries adopt similar currency policies, of if they levy heavy anti-exchange-dumping duties, the effects may not be favourable in any way.

Forward exchange: When both the countries have inconvertible paper standards, there are no limits to the fluctuations in the rates of exchange. All foreign trade therefore becomes uncertain and risky. What are the methods available for eliminating these risks of exchange?

One methods is to make all contracts with the clause, "exchange as per endorsement". That is, the rate of exchange is fixed in the contract at which the debtors will have to make payments. The second method is through a forward contract in foreign exchange.

[6] Harris, *Exchange Depreciation.*

The essence of a forward exchange contract is that a person who will have to make or receive payments in a foreign country after a certain period settles the rate of exchange with his bank. Suppose the Indian importer will have to pay the English exporter £1,000 after 3 months. Unless he can know the actual sum of rupees that he will have to pay for getting £1,000, he cannot fix the prices of the imported goods for sale. He goes to his bank and buys forward sterling at a rate agreed on now. That is, he settles the rate at which the bank will give £1,000, so that he can know beforehand how many rupees he will have to pay at the end of the period. Thus he is relieved of the risks of exchange fluctuations. The rates of forward exchange are quoted in terms of "spot" rate, *i.e.*, the rate actually prevailing on the date of contract. When forward exchange is quoted at a discount, it means that a greater amount of foreign currency can be obtained for home currency. When it is quoted at a premium, a less amount of foreign currency is available.

Factors determining forward rates.

What are the factors determining this premium or discount on the spot rate? The *first* is the relative rates of interest at home and abroad. Now in a forward contract, though the merchant is relieved of risks of exchange fluctuations, the bank will try to reduce its risks by transferring the required funds at once to the foreign centre. And this it will be eager to do if the rate of interest at the foreign centre is higher than the rate at home. For it will then be able to earn higher interest on its funds. Hence when the rate of interest on the foreign centre is higher than the domestic rate, the bank may quote forward exchange at a discount. *Secondly,* another factor is the chance of "marrying" a contract. Instead of sending funds, the bank may offset one transaction with an opposite one. While some merchants will want foreign currency, there will be others who have command over foreign currency and want to sell it in exchange for home currency. The bank will "marry" the two contracts and take foreign currency from the sellers and give it to the buyers, thus running no risk. Thus if the bank has already bought forward exchange, it will quote favour-

able terms for selling forward. The greater the chances of marrying a contract, the more favourable will be the terms. *Thirdly,* currency conditions, *viz.,* the possibility regarding the depreciation of the foreign currency, etc., will influence the determination of the rate. If the outlook regarding foreign currency is bad, the bank will be unwilling to buy such currency and will quote a premium.

Exchange equalization account : After England went off the gold standard in 1931, it was felt that some device should be adopted which would control the abnormal fluctuations in the rates of foreign exchange. As a result, an Exchange Epualization Account was established in 1932 to control the abnormal movements in the rates of exchange, and to insulate the internal monetary market from the effects of such movements. Afterwards, when, in course of time, France and America abandoned the gold standard, their governments also established special Funds or Accounts to steady the fluctuations in the rates of exchange. From the beginning, the activities of these Accounts have been conducted under extreme secrecy, and an atmosphere of mystery surrounds them. In this section, we shall discuss the functions of the British Exchange Epualization Account, as the other Accounts are worked more or less in the same way.

The British Exchange Equalization Account is directly under the control of the British Treasury, and its day to day business is conducted by the Bank of England as the former's agent. Its recources consist of Treasury Bills issued by the government, and gold purchased in the open market, or from the Central Banks of France and America. At the outset, the government handed over Treasury Bills worth about £175 millions to the Account. The amount was later raised to £575 millions in 1937. It had no foreign assets in the beginning. But the Bank of England sold some foreign assets which it had accumulated previously. The Treasury Bills are renewed every three months. The main purpose for which the Account has been established is to buy and sell sterling in exchange for foreign currencies. When the foreigners want to transfer their funds into sterling, it is the business of the Account to sell sterling to these people, and thus prevent a sudden rise in the sterling exchange rate.

Of course the authorities are not supposed to use the Account to interfere with the secular and permanent tendencies in the foreign exchange market. It will try to eliminate the temporary ups and downs in the foreign exchange rates due to the activities of the speculators or the nervousness of the investors. In other words, it seeks to do away with the adverse effects of an influx or efflux of "bad money" in the foreign exchange market. Its aim is thus to insulate the banking system from the foreign exchange market and to steady the rates of exchange as far as it is consistent with long-term trends. Thus the domestic monetary market and the foreign trade are left undisturbed, and can proceed smoothly.

At first the Account purchased dollars in exchange for sterling and influenced all other rates through the dollar-sterling rate. The dollars thus acquired were immediately converted into gold in New York. After 1933 when the U.S.A. went off gold the Account operated in francs, and converted them into gold in Paris. Things become difficult when France abandoned gold standard. But the difficulty was avoided when the Tripartite Monetary Agreement between England, France and the U.S.A. was signed in October, 1936. Under the Agreement, the three countries agree to buy from each other their own currencies in exchange for gold during the next 24 hours.

The actual operations of the Account are too complicated to be described within a short compass. Suffice it to say that the technical apparatus for controlling the foreign exchanges and the bullion market has been developed in an adequate manner. The efficiency of the system in neutralising or eliminating all temporary or speculative ups and downs in the foreign exchange rates cannot be doubted. But it should be remembered that it cannot solve the more fundamental problem of effecting an equilibrium between the price and income structures of the different countries.

Exchange control : Control of the exchange rates by the monetary authorities for a particular purpose or purposes was instituted by all countries during the war. But the deliberate adoption of this policy during the peace-time began after the onset of the great depression of the thirties of this century. Exchange control may be defined as a

system in which the government of the country intervenes not only to maintain a rate of exchange which is quite different from what would have prevailed without such control, and to require the home buyers and sellers of foreign currencies to dispose of their foreign funds in particular ways. This system was adopted in the European countries during a period of extreme world-wide depression, when there had taken place a virtually complete breakdown of the international gold standard and a collapse of international credit facilities. The primary objective in the case of a vast majority of countries was to protect the existing gold or exchange values of currencies from the unexpectedly sharp disturbances in their balance of payments. There was in many of these countries, "an almost pathologically extreme determination to maintain, at whatever cost, the official gold values of the national currencies because of the memories of the havoc which had resulted from the extreme inflations following the first world war." Hence many countries regarded the maintenance of exchange parity as a cardinal objective. Another objective was to ensure a sufficiency of foreign bills for payments regarded as pressing or to prevent import prices from rising. In a number of instances, exchange control was adopted for the purposes of favouring trade with and payments to particular countries. This was sought to be done by prescribing special exchange rates for the goods of the favoured countries or by the grant of priority of treatment on a uniform exchange rate basis. Another aim was to check the flight of capital. Lastly, it was also used for protectionist purposes, or even for obtaining revenue as in Chile.

Aims of Exchange Control.

When exchange control is adopted by any country, the government usually requires the exporters of goods and services and recepients of interest and amortisation payments to hand over their receipts in exchange for domestic money at rates fixed by it. Control is also exercised over all import transactions. Certain types of imports are prohibited to reduce the demand for foreign payments. A distinction is drawn between "necessary" and "superfluous" imports and

Types of Exchange Control.

payments for goods are given preference over purely financial transactions. Where no attempt is made to ration foreign exchange as between different countries, the system is regarded as non-discriminatory. Here the authorities discriminate as between commodities and services without regard to their national origin. But this type is seldom found in isolation. Several other types may also be distinguished, *viz.,* compensation arrangements, clearing agreements, payments agreements etc. A compensation arrangement pertakes of the character of the old-fashioned barter deal. An example would be the sale by India of cotton goods of a particular value to Pakistan, the latter agreeing to supply raw cotton of the same value to India at a mutually agreed exchange rate. Imports thus compensate for exports, leaving no balance requiring settlement in foreign exchange.

A clearing agreement consists of an undertaking by two or more countries to buy and sell goods and services to each other, at mutually agreed exchange rates, against payments made by buyers entirely in their own currency. The balance of outstanding claims are settled as between the central banks at the end of stipulated periods, either by transfers of gold or of an acceptable third currency. Or the balance might be allowed to accumulate for another period, pending an arrangement whereby the creditor country works off the balance by extra purchases from the other country. In a payments arrangement, the usual procedure of making foreign payments through the exchange market is left intact. But each country agrees to establish a method of control whereby its citizens are forced to purchase goods and services from the other country in amounts equal to the latter's purchases from the first country. Another type of payments agreement is one designed to collect past debts. For example, Great Britain and Germany agreed in 1934 to set aside 55 per cent of the value of Germany's current exports to England for the payment of past debts due to the British citizens. The remaining 45 per cent may be used freely by Germany. Mention should also be made of the system of "blocked accounts," under which the debtors are compelled to pay their dues to foreign creditors into accounts at specially designed banks. The creditors might use these blocked ac-

counts for any purpose whatever, within the debtor country. In Germany these blocked funds could only be used for specific purposes or for so-called "additional exports". On many occasions, the foreign owners of these blocked accounts were forced to sell their funds at a loss, the discount running from 20 to 5 per cent.

Dr. Einzig claimed substantial advantages for the system of exchange control. It, for example, enabled the weak debtor countries to purchase from each other and from financially strong countries. Also there was no doubt that in the conditions which prevailed throughout the world during the great depression, exchange control served to increase foreign trade by balancing exports and imports of these countries in an upward direction. Moreover, as Prof. Hansen pointed out, exchange control measures may be necessary for primary-producing countries which aspire to industrialize their economies.[7] But the greatest defect of exchange control is that it tended to bilaterize foreign trade into channels which would not be the case under ordinary conditions. It is an additional disadvantage of exchange control that it led definitely to the discriminatory regulation of foreign trade. "Trade bargaining will tend to be conducted primarily by governments instead of by the individual traders themselves, in an atmosphere of sparring for advantage of threat and counter-threat, and of the multiplication by each country of impediments to trade which it does not want for their own sake, but which it feels it must introduce as a counter-weight to the restrictions imposed for bargaining purposes by other countries".[8] There is the additional consideration that exchange control is costly in administrative manpower; it encourages spivery and corruption and is often destructive of economic incentives.

[7] *America's Role in the World Economy*, p. 185.
[8] *Trade Relations between Free Market and Controlled Economies*, p. 35.

CHAPTER XLIV

TRADE CYCLE

The course of productive activities, like the course of weather, seldom runs smooth. It has its ups and downs. A period of prosperity is generally followed by a period of depression. These fluctuations in business activities,— the see-saw movements of booms and depressions—are known as the *trade cycle,* or the business cycle. "A trade cycle is composed of periods of good trade characterised by rising prices and low unemployment percentages, altering with periods of bad trade characterised by falling prices and high unemployment percentage".[1] Two tendencies stand out as prominent characteristics of a trade cycle. It connotes, first, a fluctuation in the productive activities as measured by the figures of unemployment; and second, a fluctuation in the price-level. In the upward phase of the cycle, productive activities expand, unemployment is diminished, and prices may rise. In the downward phase, productive activities are curtailed, unemployment increases, and prices fall. Generally, there are two broad phases, viz., prosperity and depression. The prosperity phase is marked by two movements, recovery and boom; depression consists also of two tendencies, recession and contraction. There are, moreover, two turning points, upper and lower. At the lower turning point in the bottom of the depression, recovery starts and soon grows into the boom, a rapid phase of expansion. The end of the boom is managed by the upper turning point, when recession grips the economy, which soon slides into depression. There are, therefore, four phases and two turning points.

The term "cycle" is applied to these fluctuations "because an excess movement in one direction tends to bring into operation not only its own remedy but a stimulus to an excess movement in the other direction".[2] Like the

[1] Keynes, *Treatise on Money*. Vol. I, p. 278.
[2] Hawtrey, *Trade and Credit,* p. 83.

swing of a *pendulum,* a movement in one direction will automatically generate movements in the opposite direction. Periods of prosperity contain within them the seeds of the coming periods of depression. Moreover, these cyclical movements denote a certain amount of periodicity. There is a sort of regularity in the time intervals between the phases of the cycle. It was claimed in early days that the time usually occupied by a cycle was ten or eleven years. But the time intervals are far from regular.

Characteristics of a cycle.

A few prominent characteristics of the trade cycle may be noted here. *First,* the cycle is synchronic. That is, the upward and downward movements tend to synchronise or occur at approximately the same periods in all industries. When business is good in one industry, it gives more orders to others for raw materials, machineries, etc. It employs more labourers and the latter's aggregate incomes are increased. These additional orders and additional incomes bring good trade to other businesses. Similarly, periods of distress in one industry spread to others. The trade and business of a country are so interconnected that a wave of prosperity or depression in one industry would soon generate a similar wave in other industries. *Secondly,* these cyclical movements are international in character. Through the mechanism of international trade and foreign exchange, businesses in countries are so interlinked that a prosperity in one country will spread to, and be shared by others also. *Thirdly,* though the alternate movements of booms and depressions are shared by each industry, they are not shared in equal degree by all industries. It is a familiar fact that what are called "constructional industries",—ship-building, engineering and other industries making investment goods, experience the largest fluctuations. During the upward phase, a great part of the resources of the community is devoted to the production of investment goods, while during the downward phase, a smaller part is so devoted. The fluctuations are far wider in industries making producer's goods than in those making consumer's goods. *Lastly,* the cycles exhibit a clearly marked wavelike movement. And the different cycles are nearly similar to each other. "A 'typical' cycle constructed by

making as it were a composite photograph of all the recorded cycles would not materially differ in form very widely from any one of them. But this typical cycle is not an exact replica of any individual cycle. The rhythm is rough and imperfect. All the recorded cycles are members of the same family, but among them there are no twins".[3]

Theories of trade cycles : Various theories regarding the origin of trade cycles have been advocated. It is impossible to review them in the short compass of this book. We shall, however, take the main types of theories and discuss their appropriateness. Before proceeding to that, it is necessary to dispel one mistaken idea about the causes of the depression.

Trade depression, it is claimed, is due to the general overproduction of goods. But if it means that man has produced more goods than he desires to consume, it is impossible. It implies that man's wants are completely satisfied ; that each individual has as many goods as he likes to consume. But no such conditions can exist in modern society. There are no limits to the total wants of human beings. Over-production is possible only in the sense that goods cannot be sold at a profit. Such a phenomenon is quite possible. Owing to a faulty anticipation of demand, more goods may be produced in particular industries than can be sold with profit. There occurs partial over-production in particular industries. Smaller orders for machineries, raw materials, etc., are given by these industries and labourers become unemployed. Their incomes fall and they purchase less of other goods. The result is that other industries are also depressed. But this cannot continue for long. Labour and capital will move from those industries, and slowly and steadily the state of over-production will pass off. The phenomena of general over-production are, therefore, possible. Moreover, over-production is the *symptom* of trade depression and cannot be *its cause.* We cannot

Can there be generally over-production?

[3] Pigou, *Industrial Fluctuations,* pp. 15-16.

explain depression by saying that it is caused by the accumulation of large stocks of unsaleable goods.

Climatic theories : Following a suggestion of Herschell, Jevons came to the conclusion that trade cycles are caused by "sun-spots". These sun-spots occurred in cyclical order at intervals of 10·45 years, and he calculated that the average length of the trade cycle was also 10·46 years. When these sun-spots appeared, the sun emitted less heat and this made the harvest poorer. Bad harvests diminished the purchasing power of the agriculturists, and they purchased less goods. The result was depression. In a modified form, this theory is held by H. L. Moore and Sir William Beveridge.

That the prospects of agriculture affect the prospects of industries, nobody would deny. But it is difficult to correlate business cycles with climatic cycles. Climatic influences may be one of the factors which sometimes affect the course of the trade cycle. But they cannot account for all the features. For example, they cannot explain why the production of capital-goods increases more during booms than during depressions.

Theories of over-saving or under-consumption : Developing a line of thought prominent in Marxian theory, Hobson came to the conclusion that the trade depression is due to "over-saving." The modern society is characterised by great inequality of incomes, and a large portion of the total wealth is owned by a small class. In times of brisk business, the incomes of this class increase and a greater proportion of them is saved. The wealthy businessmen continuously invest their savings in productive enterprises, in turning out more machineries, tools, etc. There results a deficiency of purchasing power available for buying consumer's goods, and this is borne out by the familiar phenomenon of wages lagging behind prices. Thus while purchasing power is diminished, the supply of goods is increased as the new machineries, etc., are employed. The result is a glut of goods in the market which cannot be sold at a profit. And the society enters upon a period of depression. This is due to the lack of sufficient money to buy goods; and the latter is due to the fact that a greater proportion of incomes has been withdrawn from consumption, and has been saved. This deficiency of spending and the excess of

saving are the cause of depression. In slightly different forms, this theory is also held by Messrs. Foster and Catchings and Major Douglas.

This theory provides an explanation, not of trade cycles, but of depressions. Even as an explanation of depression, it is defective. There is no reason why the business class would continuously go on saving. They may increase their expenditure on luxuries. Moreover, it assumes that the amount saved would automatically be invested. But this is not always the fact. According to this theory, depression occurs because more consumer's goods have been produced than can be sold. We should expect therefore that the first sign of depression would be the fall in the price-level of consumer's goods. But in actual fact, depression in its first phase is characterised by a fall in the prices of producer's goods, and the price-level of consumer's goods is generally the last item to fall.

Monetary theory of the trade cycle : According to this view, whose most prominent advocate is Hawtrey, the trade cycle is a "purely monetary phenomenon". In the modern currency systems, bank credit forms the principal means of payment. But credit is inherently unstable. It lies in the power of the banking system as a whole to create more credit. This they can do by lowering the rate of discount or by the purchase of securities. The upward movement of the trade cycle is brought about by an expansion of credit engineered by the banks. This additional credit borrowed by businessmen is spent in the payments of wages, interest, rent, etc. According to Hawtrey, the behaviour of the merchants and the dealers is very sensitive to changes in the rate of interest. These dealers buy and sell large quantities of goods with borrowed money; and a slight lowering or raising of the rate of interest will induce them to borrow more or less from the banks and thus to increase or decrease their stock of goods. Thus when the rate of interest is lowered, the traders borrow more money and try to increase their stock. They give larger orders for goods to the producer. The latter tries to increase his output and

Trade cycle is due to monetary causes.

engages more labour, buys more raw materials, etc. The aggregate money incomes of the community increase; and so the consumer's outlay increases. This means increased demand for goods. The dealers now find that their stocks are being depleted. They give more order to the producers. They, in their turn, try to increase production. Money incomes and outlays increase. Prices begin to rise. The expectation of a further rise in prices induces dealers to increase their stocks. Again the same process is repeated, and prices rise in a crescendo.

The demand for loans rises, while the reserves of the banks are getting depleted owing to the internal drain of cash into circulation and the possible export of gold. The banks will be forced to raise interest rates, and refuse to grant additional credit. This causes the bubble to burst and the dealers hastening to reduce their stocks give fewer orders to producers; the latter curtail their productive activities, and unemployment ensues. During this period of depression, businessmen need less credit and deposits and reserves accumulate at the banks until they lower the rate of interest. The cycle starts again. The remedy for the cycle is for banks so to regulate their volume of loans that prices will be stable.

That an expansion of business activity is sometimes caused by an expansion of credit cannot be denied. One of the conditions for the development of booms is that there should be an expansion of credit. But the latter is not the cause of the former. The trade cycles are mainly caused by non-monetary factors. The monetary influences make the boom possible and increase or decrease the amplitude of fluctuations of the business cycles. According to this theory, trade cycle would cease if prices are kept stable. The theorists do not deny that the impulses to the expansion or contraction of business activities may come from non-monetary factors, but if the banking system suitably regulates the volume of credit, expanding it when business activities show signs of depression, and contracting it when the latter are expanding, the fluctuations would become impossible. It is, of course, true that the trade cycle is a dance of the dollar, and that the fluctuations in prices and credit are the inevi-

table accompaniments of a cycle. So also "in modern mountaineering there is an almost perfect correlation between the possession of an ice-axe and the ascent of snow mountains. Practically nobody ever ascends a snow mountain who has not previously bought an axe .... But this does not prove that if the purchase of ice-axes was prohibited by law, snow mountains would no longer be ascended".[4] So we cannot eliminate these fluctuations by keeping prices stable. The trade cycle, therefore, though it appears in a monetary garb, is not due to monetary causes alone.

Psychological theory : According to this theory, upheld generally by Pigou, the dominant cause of the business cycles is the movement of business confidence. When business is brisk, people expect good profit and over-estimate the prospects of the future. They expand their productive activities. The confidence of one class of businessmen generates similar feelings in others, because "enthusiasm and despair are both catching." Thus the feelings of optimism and despair both tend to infect others. This optimism breeds errors, and production is generally carried on beyond the limits of profitable sale. When this fact becomes patent, the businessmen suffer losses ; they at once grow pessimistic about the prospects of business and curtail their productive activities. Businessmen thus alternate between errors of optimism and errors of pessimism, and these set up wave-like movements in activities. The adherents of this theory do not deny that other factors, *e.g.*, harvest conditions, etc., may be at work, but these influence production by affecting business confidence.

This theory contains much truth. Business conditions are intimately influenced by business confidence. But it fails to explain why a boom starts, and why confidence revives. It is also inadequate to explain why optimism gives rise to pessimism. To account for these movements, it must take help of other factors. The value of the theory lies in the recognition that recovery from depression is not possible unless business confidence revives.

[4] *Pigou. Industrial Fluctuations*, p. 197.

Recent theories :[5] A large number of writers, including the Late Lord Keynes, have expressed the opinion that the essence of trade cycles is a variation in the volume of investment goods caused by changes in the marginal efficiency of capital (which has been defined by Keynes as the expected rate of return on the capital cost of a newly produced asset), or in the rates of interest. If we refer to our previous analysis about saving and investment, we can understand the part played by these two factors in determining the fluctuations in the volumes of money incomes, employment, etc. At the bottom of a depression, something happens to raise the marginal efficiency of capital, or to cause a fall in the rate of interest. The former may be due to the depletion of previously accumulated stocks below normal, or to the necessity of renewing worn-out capital-goods, or to the discovery of some new resources, or to new inventions. The fall in the rate of interest may be caused by an increase in the quantity of money in the possession of banks ; or it may be due to a weakening of the liquidity-preference which leads people to dishoard. Any one of these factors may initiate a revival of investment. The volume of employment increases as more and more resources are drawn into production for turning out investment goods (assuming the existence of idle resources which is a fact at the bottom of a depression). An increase in volume of employment of factors will lead to a rise in money incomes. In this way a burst in investment gives rise to a boom, and this boom lasts so long as the investment goods are being constructed. But sooner or later, the scope for new capital-goods declines as all remunerative openings for investments are being progressively utilised. Hence there is an inevitable tendency for the prospective yield on new capital-goods to fall. Moreover, further expansion in the volume of capital-goods increases their cost of production, either as wages, or prices of materials, etc., rise. Under the combined influence of these two factors, the marginal efficiency of capital collapses. If the rate of interest does not decline or declines insufficiently, the consequence must be a fall in the volume of

[5] While mainly basing on Keynesian analysis, we have tried to avoid the intricacies of that theory.

investment. A proportionate fall in the rate of interest is unlikely. On the other hand, as the expanding income and expanding business raise the monetary requirements of the public, the banks find it difficult to meet this expanding demand by supplying increasing quantities of money. Interest rates must begin to rise. Thus the volume of investment follows a downward course. Decline in investment causes a fall in the volume of employment and monetary incomes, and the economic system finds itself again in the throes of a depression.

According to Lord Keynes, there is, moreover, a chronic tendency towards a deficiency of demand or depression in a progressive economy. As a community grows richer, its propensity to consume declines. On the other hand, on account of the abundance of capital goods, the opportunities for new investment become less attractive. Faced with declining marginal efficiency of capital from both sides, new investment may fall off with all the attendant symptoms of depression.

It has been suggested by Prof. A. H. Hansen that the western world is now faced with the problem of declining investment opportunities. This, he thinks, is due to the combined effect of the decline in population growth and the exhaustion of many of the possibilities of inventions likely to absorb large capital outlays. The result is that we are not only faced with a business cycle problem, but with a "secular stagnation" in which "sick recoveries die in their infancy and depressions feed on themselves and leave a hard and seemingly immovable core of unemployment".[6]

Hicks's theory of the trade cycle :[7] Hicks has stated a theory of the trade cycle based mainly by combining the multiplier and the acceleration principles.[8] According to him, the cyclical fluctuations are due to the combined effects of the multiplier action and the acceleration principle. He assumed that investment is generally of two types, autonomous and induced. Autonomous investment consists of those types of investment which are independent of changes in output. "Public investment, investment which occurs in

direct response to inventions, and much of the "long-range" investment (as Mr. Harrod calls it) which is only expected to pay for itself over a long period, all of these can be regarded as *autonomous investment* for our purpose." In a growing economy, such investment tends to increase over time at a more or less constant rate. *Induced investment* consists of those types of investment which are induced by changes in output. Suppose that in any industry, there is an increase in output due to, say, an increase in demand. In so far as this increase is expected to be permanent, the production of the increased output would necessitate some increase in the existing capital stock in the industry. Thus

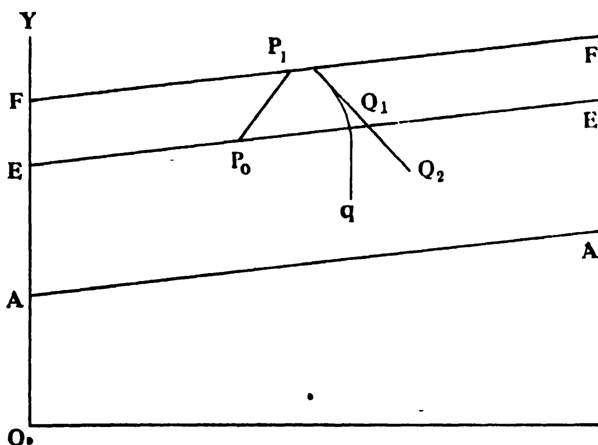


FIG. 38.

an increase in output induces investment. This is nothing else but the acceleration principle. We know that the level of money income depends on the volume of investment. So corresponding to the volume of autonomous investment, there will be a particular level of money income, the ratio of income to investment depending on the inter-action of the multiplier and the acceleration principle. Money income will, therefore, grow at the same rate as the volume of autonomous investment. In fig. 38 Hicks traced the growth of autonomous investment along the line AA, which slants upwards to the right, because autonomous investment

grows through time at a more or less constant rate. The line EE represents the level of output or income, corresponding to the volume of autonomous investment. The distance between AA and EE depends on the combined value of the multiplier and the accelerator.

Let us assume that while the level of output (or income) is at Po, an invention occurs and induces a small burst of autonomous investment. As the volume of investment increases beyond its normal level, output (or income) will tend to grow a long the line Po P_1, away from the equilibrium path of EE. This expansion in output will induce further investment, and the effect of this induced investment will be to cause a further rise in output (or income). In this way, output will rise until it touches what Hicks calls "the full employment ceiling". The full employment ceiling consists of the maximum amount of output (or income), which is produced when there is full employment of all resources. It is called a ceiling, because it is impossible to expand output beyond this limit. The full employment output, corresponding to each level or investment, is measured along the line FF.

Once we reach this Everest, output and income cannot grow any further. The economic system may, for some time, proceed along this summit or ceiling. But sooner rather than later, it will have to move in a downward direction. This is due to the following reason. The total output has been raised to the full employment level FF on account of the effects of *both* autonomous and induced investment. Induced investment is induced by the increase in output, and will stop altogether when output ceases to increase. Once the system reaches the full employment ceiling, output cannot increase any further. So when the economic system reaches FF at P_1, output ceases to increase, and there is no longer any induced investment. Only autonomous investment continues; but the volume of such investment alone cannot support the production of full employment output (or income). Hence the output will tend to decline below the full employment level. As output declines, it will induce a certain amount of disinvestment. If the fall in output induces disinvestment at the same rate at which

increases in output induce investment, the output will fall along the curve Q_1q. But this does not happen. Disinvestment in fixed capital can only take place by a slow process of wearing-out, which takes a comparatively long time. Hence the system moves downward along the dotted line $Q_1 Q_2$.

So far it seems that the downward movement would be more gradual than the upswing. Yet in practice, we find first the reverse. A leading feature of the downswing is that the decline in output, once it gets under way, tends to proceed at a fast rate. This, according to Hicks, is due to the operation of the monetary factors. As the downward movement starts, sales of goods become difficult and the burden of fixed costs become oppressive. The rate of bankruptcy rises. As a result, there will be a sharp rise in liquidity preference. The latter would react adversely on the credit situation, and the resultant credit stringency causes activity to fall at a very rapid rate. This must tend to aggravate depression.

Such is, in essentials, the Hicksian theory. We have given just a bare summary. Adequate justice cannot be done to such a well-integrated discussion within a short compass.

Conclusion : In the present state of our economic knowledge, it is not possible to give a complete explanation of the causes of the trade cycles. The literature on the subject is highly controversial and is constantly growing. But the apparent disagreement among economists is not so great as it appears at first sight. The trade cycle is the result, not of one single factor, but of a multiplicity of factors, among which sometimes one and sometimes another becomes dominant.

Remedies : So disastrous are the effects of the trade cycle, especially in relation to the volume of unemployment, that there is no more important practical problem facing us to-day than the abolition of these fluctuations. But unfortunately, economists are not yet agreed as to the correct policy to be pursued. The remedy that is proposed depends obviously upon the diagnosis that has been made. Those economists who support the monetary explanation of the cycle

pin their faith on curing it by means of control over the supply of money. In their oponion, the banking system can do much to decrese the amplitude of the fluctuations of the trade cycle by manipulating the bank rates, or by engaging in open market operations. When businesses show undue signs of expansion, the Central Bank should put up the screw, increase the bank rate and sell securities in the market. Similarly, approaching periods of depression can be corrected by a lowering of the bank rate, purchase of securities, etc. In this way it is claimed that if the Central Bank is sufficiently bold and far-sighted, it can offset the wave-like movements of the trade cycle.

Monetary remedies.

Those who subscribed to the underconsumption theory are not satisfied with mere manipulation of the bank rates and open market policy. In their opinion, steps should be taken to stimulate the falling propensity to consume which is the root cause of depression. The tax system should be so devised as to secure a much more equal distribution of incomes and remove the fundamental cause of the "over-saving" propensity. Mr. Hobson pleads for an adjustment of the wage rates in the upward direction during a boom. By increasing wages and reducing profits, it will stimulate consumption and slow down savings. By reducing profits, it would check the incentive of businessmen to borrow and of bankers to lend. So less credit would be created. Prices would rise by a smaller percentage.

Greater equality of incomes.

Other economists who consider these cycles to be caused by fluctuations in the volume of investment goods, plead for the adoption of measures to curb investment during booms and to stimulate it in a depression. In their opinion, monetary measures will only create the favourable environment for the successful carrying out of fundamental remedies. But they cannot eliminate the trade cycles. The best remedy is for the government to carry out a *contra-cyclical fiscal policy* in various directions. The public authorities should plan their public works programme in such a way that a greater amount would be spent in times of depression

Contra-cyclical fiscal policy.

and less in times of booms. For example, more post offices, more roads, more railways and irrigation works should be constructed during periods of depression. This would relieve unemployment, increase incomes and stimulate consumption. Taxes should be reduced during depression, specially the taxes on business profits. This is likely to stimulate private investment. The budget should deliberately run into deficits to be financed by loans.[7]

During booms, public works programme should be curtailed ; heavy taxes should be levied on business profits so as to check private investment, and the budget should show sufficient surplus which should then be utilised to eliminate the previous deficits as far as possible. These and other measures designed to stimulate consumption and private investment during depression have been advocated to cure the trade cycle.

[7] See next chapter as well as Ch. L2.

CHAPTER XLV

MONETARY MANAGEMENT

External vs. internal stability : The pre-war gold standard was managed for the purpose of securing exchange stability. The exchange rates were kept stable within the narrow range of the gold points, and the internal price and cost structures were allowed to fluctuate. That such stability of exchange rates secured large benefits for the world is no longer doubted. It facilitated large-scale movements of goods from one country to another. It also fostered the growth in the volume of international investment. But critics have not been wanting who questioned the utility of stable exchange rates.

These critics argue that exchange stability connotes only a very small thing. It does not means the stability of the foreign value of the local currency. It of course protects the foreign trader from the fluctuations in exchange rates. But it does not protect the producer for export, as it does not guarantee either stability of the export prices, or stable relations between his costs and prices. The costs of the export producer will depend on domestic conditions, while the prices that he will get for his products will depend on the vagaries of the world price-level. "It is a narrow conception of foreign trade which looks merely to the interests of the middle man, and neglects those of the home producer." Moreover, stability of the exchange rates would communicate all sorts of disturbances occurring in the other countries to the domestic system. A political disturbance in the U.S.A. would at once communicate its economic effects to India. It is better, therefore, to follow a policy of internal stability of prices and let the exchanges "go hang".

Defects of a policy of external stability.

But this is putting the dilemma in much too extreme form. "To put the two as absolute alternatives is not merely an exaggeration ; it is untrue".[1] Stability of exchange rates

[1] *The Future of Monetary Policy*, p. 116.

cannot be maintained for a long time if the internal economic conditions are allowed to fluctuate. That has been amply proved by the complete break-down of the gold standard in the thirties of this century. Similarly, stability in internal prices alone cannot be achieved successfully if exchange rates are allowed to fluctuate violently. Only a country which took no part in international trade and investment would be able to secure the one without the other. When a country is doing a fair share of the world trade, instability in exchange rates would mean an upsetting of the internal price-level, if only because import prices form a substantial part in the determination of the general price-level. Hence from a broad point of view, the two types of stability are dependent on each other. There is no doubt that the two polices may be in conflict with each other on particular occasions (*e.g.,* wars and revolutions, abnormal movements of short-term funds, etc.). It should be the aim of monetary policy to harmonise the two as far as possible. But excessive pre-occupation with mere external stability should no longer be encouraged. More and more attention should be paid to the formulation of policies for securing some amount of stability in the internal price and cost structures.

Monetary aims and prices : Assuming therefore that our aims should be to manage the internal price-structures, the next question that arises is,—*how do we want prices to behave?* Let us for the moment leave aside the rather awkward question, can we really manage the prices? Supposing we can do that, shall we try to have stable prices, or rising prices or falling prices?

Marshall, writing in the latter part of the 19th century, showed a preference for a falling price-level. Periods of rising prices contain within themselves seeds of future disasters. Wild oats are sown during those periods, whose fruits the economic system had to garner painfully during the succeeding periods of depression. With falling prices, though the businessmen get less, the wage-earners get more. In these ways, he argued the case in favour of falling prices. But the prevailing opinion during the pre-1914 days was in favour of any of these two courses,—a gently rising price-level and a stable price-level with a majority for the latter.

A gently rising price-level : The case in favour of a gently rising price-level rests on the fact that it acts as a great incentive to enterprise. When prices rise the expenses of the businessmen do not rise as much as prices. It is well-known that wages are usually very sticky, and follow prices haltingly. Hence during such periods, businessmen can make large profits. Pospects of such profits will stimulate them to an increased production of goods. Thus rising prices would secure a fuller employment of the workers than could otherwise be obtained. "Is it not rising prices that empty the work-houses and the employment exchange registers, and fill the factories and the shipyards? And is it not better that all should be busy, even though grumbling at the cost of living than that some should be living cheaply and others left on the streets?"[2] Moreover, according to Robertson, the industrial advance in the 19th century has been made possible because of the stimulus given by rising prices. Periods of rising prices cause the wealth of the community to increase faster than would otherwise be the case.

Advantages.

There is of course much truth in this view. But we must also set on the other side the difficulties of such a policy. The arguments in favour of this policy rest on the questionable assumption that businessmen require an extra incentive to carry on their functions energetically. Supposing there is stability of prices, that does not mean that businessmen would have no adequate stimulus. The usual ups and downs of individual industries will often provide an adequate stimulus. Moreover, such a policy would also mean that the inefficient businessmen would survive and succeed in the competitive struggle because of the profits received from rising prices. Pressure upon businessmen would be lacking to induce them to exercise their abilities to the utmost. There is also the danger that the prospects of large profits will lead to over-expansion in the making of capital-goods and to a speculative boom. If this happens, and is likely to happen, then we must be prepared for the inevitable depression. It is doubt-

Defects.

[2] Robertson, *Money*, p. 139.

ful whether the balance of advantages lies on the side of the rising prices when we take into consideration the serious loss of wealth and of employment resulting from the depression. Lastly, there is that uncomfortable question of social justice. Periods of rising prices lower the real value of the money incomes of the wage-earners, and the investing classes. Is it desirable that they should be continually robbed of their honest efforts in order to put the businessmen on their mettle?

A stable price-level : The case in favour of a stable price-level is very popular among the economists. In the first place, such a policy is extremely simple and very easy to grasp. In recent times, we have so much experience of the evils of instability of prices that to point out the benefits of stable prices seems to be superfluous. *Secondly,* it has been argued that such a policy can be supported on broadest grounds. Money is a measure of value, and like all measures, should be stable in value. Just as we consider it as self-evident that a pound, being the measure of weight, should always contain the same weight, so money should also measure the same value. *Thirdly,* it is pointed out that trade cycles have always been accompanied by large fluctuations in prices. Whatever the causes of the trade cycle,—monetary, or non-monetary, it seems overwhelmingly probable that stability of prices would do away with the more extreme fluctuations in business activity. *Lastly,* such a policy would ensure justice between debtors and creditors, and between the wage-earners and the employers.

Advantages.

It has, sometimes, been said in criticism of this policy that a stable price-level would not provide sufficient incentive to the businessmen. But stability of prices does not imply absolute quiescence. There would still be the ups and downs of individual industries. Moreover, it does not mean absolute stability of prices. We must allow for a margin of tolerance in the movements of prices. Small changes on either side of the index-number will, of course, occur. All these would provide sufficient stimulus to the businessmen.

In spite of the simplicity of such a policy, there are

several difficulties in the way of price-stabilisation. There are many price-levels, the retail price-level, the wholesale price-level, etc. If we are to stabilise the value of money, we should keep the retail prices stable. But this is not possible. We do not possess complete data for constructing a satisfactory index-number of retail prices. There is also the difficulty that the quality of the commodities going under the same name changes constantly at different dates; and that new commodities are appearing and old ones dropping out. Owing to these difficulties, it has been suggested to stabilise a wholesale price index. Such an index-number, to be practicable, would consist of a selected list of goods. As such, it would be exposed to a real danger. Suppose sixty commodities are selected, and their prices are kept stable. The prices of other commodities will be allowed to fluctuate. Investment in the selected commodities would be comparatively safe, as there would be little risks of price-instability, but investment in the other goods will not be so safe. Hence the tendency will be for investment to increase in the selected goods, and to decrease in the production of other goods. The direction of investment may thus be warped. The stability of such an index is thus no guarantee of real economic stability. A more fundamental criticism is that a policy of stable prices would not guarantee the absence of inflation or deflation. In a community where large technical advances are being made, prices should fall *pari passu* with the increase in productivity. But if the prices are kept stable, this would give rise to abnormal profits, leading to over-investment and collapse. This actually happened in the U.S.A., in the pre-1929 years. The Federal Reserve Board kept the prices more or less stable during this period. But productivity was increasing rapidly in America. The result was abnormal profits, leading to the stock exchange boom and then the collapse. Conversely, prices may remain stable, and instead of a price-fall there may be a piling up of goods in warehouses, or reduction in output. "It is theoretically conceivable that there might be severe depression during which prices remain stable but in which all the consequences of a price-fall are reproduced in

Difficulties of such a policy.

their strongest forms."[3] Thus stable prices would ensure neither stability of employment, nor of consumption.

"Neutral" money: In view of the defects of stable prices, it has been proposed recently by Mr. Hayek that the ideal monetary policy is that which interferes as little as possible with the operation of non-monetary forces. Suppose there is no money, and the barter system prevails. Under such a barter system ratios of exchange would be established between different goods. The aim of monetary policy is to see that the same ratios of exchange prevail even under money. The introduction of money should not "distort" the situation that should have obtained under barter. Money, in other words, should be neutral in its effects on prices.

Money should be neutral.

This could be secured, according to Mr. Hayek, not by stability of prices, but by stability in the quantity of money in circulation. If the supply of effective money is kept constant, then there can be no distortion of the 'real' ratios of exchange through changes in the quantity of money. The price-level would then vary inversely with productive power. If the efficiency of the productive system increases as a result of technical inventions, or the discovery of new supplies of natural resources, it will lower the cost of production per unit of output. If the quantity of money is kept constant, prices would also fall, and there would not be any inflation of the profit margin. If, however, the productivity falls as a result of the destruction of wealth due to wars, etc., then prices would rise. Changes in population would also lead to changes in prices, an increase in population leading to a fall in prices and *vice versa*. It should be noted that under this policy, the quantity of money would not be kept constant under all circumstances. It only means that the quantity of "effective" money should be kept fixed. The quantity of money would thus be increased when the velocity of circulation of money falls, or when vertical disintegration takes place, *i.e.*, the number of stages in the processes of production increases.[4]

[3] *The Future of Monetary Policy*, p. 58.
[4] Hayek. *Prices and Production*, p. 124.

There is much to be said in favour of a price-level varying inversely with productive power. It would mean that the creditors and the investing classes would automatically receive a share in the fruits of progress in the form of falling prices. Moreover, the wage-earners would then secure higher real wages 'without having recourse to perpetual demands for a rise in money wages,—demands which, whether or not they involve actual stoppage of work, certainly tend to embitter human relations and to devour the energies of constructive leadership.'[5]

Price-level varying inversely with productive power.

But such a policy will be faced with most serious practical difficulties. In order to keep the effective supply of money constant, the quantity of money has to be changed as its velocity of circulation is altered, or as the extent of integration of businesses is changed. But how is the Central Bank to know when and in what degree the velocity of circulation, or the extent of integration or disintegration of the firms has changed? These practical difficulties are almost an insurmountable barrier to the successful carrying out of such a policy. Another fundamental difficulty arises when we consider the case of increasing productivity. Under such a policy, prices would fall as cost reductions are effected. This pre-supposes conditions free from artificial monopoly prices. If some prices are monopoly controlled, and are prevented from falling, then other prices must fall by greater degree in order that average prices should correspond to the average costs. These other industries would then be subjected to a prolonged period of depression. It is essential that the prices of all factors must fall in the same proportion as the prices of goods. But to assume that wages, rent, or interest could be freely adjusted to changes in prices, that there are no problems of fixed interest rates, of wage regulations, would be to assume away all the difficulties in the situation. And if the economic system is so highly flexible, any monetary policy would be as good as another.

Difficulties of such a policy.

In view of these conflicting opinions it is very difficult

[5] Robertson. *Money*, p. 136.

to determine which is the proper monetary policy. But there is unanimity at least on one point:—efforts should be made to avoid, as far as possible, the abnormal fluctuations in business activity. And so far as monetary activity alone can control the economic system, the aim should perhaps be some stability of prices with suitable adjustments when necessary, if any large changes in productivity take place.

CHAPTER XLVI

INTERNATIONAL MONETARY FUND

International currency proposals : We already know that all the countries of the world were either forced off the gold standard or gave it up in self-defence during the great depression. There ensued a period of unstable exchange rates, high tariffs, quotas and depreciating currency. The volume of international trade began to shrink continuously. It was soon recognised that in the post-war period, the reconstruction of the devastated countries cannot proceed smoothly if the trade between the nations is not freed from its present shackles. This cannot take place unless the rates of exchange between the different countries are kept stable. But a return to the gold standard of the pre-war variety with its rigid exchange rates was considered inadvisable. That standard was too narrow for effective functioning of a relatively inelastic economic system. The new system must, therefore, secure to each country a large degree of autonomy in the management and regulation of its economic life. As the prospects of the end of the war drew nearer, it was felt that the problem of international monetary reorganisation must be tackled first of all. The question was discussed for more than a year by the experts of the U.S.A. and U.K. At first each of the two countries put forth for discussion two different Currency Plans,—the Keynes Plan and the White Plan. As a result of further discussions between the experts, another scheme was evolved, and a Conference of the representatives of the United Nations was held at Bretton Woods in the U.S.A. in July, 1944. These proposals were approved at the conference with some modifications, and had been submitted to the different governments for ratification.

International Monetary fund.

The Bretton Woods monetary agreement falls into two parts. The first deals with the provisions relating to the International Monetary Fund. The second concerns the International Bank for Reconstruction. The International Mone-

tary Funds is to be set up by those members of the United Nations who ratify the agreement. It cannot be put into operation unless the governments, contributing 65 per cent of the total quota, ratify the agreement. It is to be ratified by the end of December, 1945. The total resources of the Fund will amount to 8800 million dollars, to be subscribed by the member countries. The quota of each member has been fixed in the agreement. The U.S.A. will contribute 2750 million dollars; Great Britain 1300 million dollars; the U.S.S.R. 1200 million dollars; China 550 million dollars; France 450 million dollars and India's share will be 400 million dollars. Each member is to pay in gold, as a minimum, either 25 per cent of its quota, or 10 per cent of its net official holding of gold and dollars, whichever is less. The balance of its quota is to be paid in its own currency. The Fund is to be managed in the following way. There is to be a Board of Governors where each member has one representative. This Board will decide larger questions of policy. The real authority is vested in the Executive Committee, consisting of 12 members, of whom five will be selected by the U.S.A., U.S.S.R., U.K., China and France. The other American republics will elect two Directors. Five Directors will be elected by all other countries. The election is to take place according to the system of proportional representation, each member having 250 votes plus one additional vote for each part of its quota equivalent to 1,00,000 dollars. The Executive Committee will appoint the Managing Director who will be the chief of the operating staff. The principal office will be in the U.S.A.

Functions.

The resources of the Fund are to be utilised to promote exchange stability, to maintain exchange arrangements among the members, to avoid competitive exchange depreciation, and to eliminate foreign exchange restrictions which hamper the growth of world trade. The main purposes to be followed by the Fund are to assist in the establishment of the multi-lateral system of payments in respect of current transactions, and to facilitate the expansion and balanced growth of international trade. The Fund is not meant to be concerned with the international indebtedness arising out of the last war, nor

with the relief or reconstruction operations. Its main function will be to promote exchange stability, and to facilitate the settlement of international accounts. The following provisions have been made to secure exchange stability. At the time of adhering to the agreement, each member shall determine the par value of its currency either in terms of gold or of the U.S.A. dollar. The par of exchange is to be that prevailing on the sixtieth day before the date of the first operation of the Fund. Each member shall conduct all exchange transactions on the basis of this par value. To that extent, the agreement will promote exchange stability. But unlike the gold standard, this par of exchange can be altered when circumstances necessitate such a step. The plan provides machinery for changing the par value of a currency. Each member can change the par value of its currency by 10 per cent after consulting the authorities of the Fund. The latter will have no right to raise any objection. If this change does not remedy the situation, the member may then propose further changes in its rates of exchange to the authorities of the Fund. The latter may either concur, or object but it must declare its opinion within 72 hours, if the proposed alteration does not exceed 10 per cent of the initial par value. Further changes can be made with the permission of the Fund which must concur "if it is satisfied that the change is necessary to correct a fundamental disequilibrium." Thus the provisions of the Fund will guarantee reasonable stability of exchange rates, while providing a suitable machinery for bringing about orderly and agreed changes in the rate when the fundamental economic conditions undergo a change.

When can exchange ratio be charged?

Another important function of the Fund will be to promote the settlement of international accounts. A country may be faced with an unfavourable balance of accounts, and it may find it difficult to secure the currency of the creditor country to settle its balance. Faced with such a situation, the country may be forced to restrict foreign exchange dealings, and to control its foreign trade. To solve this difficulty, the following provisions have been made. The member will have the

The Fund and the debtor country.

right to buy from the Fund the requisite foreign currency of the creditor country in exchange of its own currency, to meet the deficit in the balance of accounts. There are, of course, certain conditions. First, the member cannot purchase foreign currency from the Fund beyond 25 per cent of its quota within a period of 12 months. Secondly, the aggregate of such purchases cannot exceed 125 per cent of its quota. These limitations may be relaxed in extreme cases. Thus these provisions will enable a debtor country to tide over temporary disequilibrium in its balance of accounts. But in order to discourage frequent recourse to the Fund for this purpose, and to discourage continuing unbalanced accounts, there is a provision for the levy of a scale of fees by the Fund on a member country if the Fund's holding of its currency exceeds its quota. In order to avoid the payment of these fees, the country concerned will have to take necessary measures to check the growth of its debit balance beyond a certain size.

The fund and the creditor country.

The Fund will, therefore, help a country to meet a temporary deficit in the balance of international accounts by selling the requisite foreign currency to it. But the Fund may not possess such a currency in sufficient quantities. This may ensue in the case of a creditor country like the U.S.A., which may go on piling up abnormally large surplus balances in current account. The authorities of the Fund may then take steps to borrow that currency from that country, or from any other source (of course with the permission of that country); or they may require that country to sell its currency to them in exchange for gold. Should these steps prove insufficient, they may issue a report, setting forth the causes of scarcity of such a currency, and submit recommendations designed to bring it to an end. They may make provisions for rationing supplies of the scarce currency, and permit the other members to impose restrictions on payments in that currency. These steps may induce the creditor country to be more reasonable, and to make its currency available to others.

These are the permanent provisions of the Fund. Certain arrangements have also been made to cover the transition period which may last from 3 to 5 years. During

the transition period, a member country may be allowed to retain exchange restrictions, or discriminatory currency arrangements, etc. After the transition period is over, such restrictions are to be given up.

The role of gold in the plan.

The International Monetary Fund plan has thus been designed to give a reasonable degree of stability to the exchange rates without making the parity absolutely rigid. To that extent it is an improvement upon the pre-war gold standard. What place has been allotted to gold in the proposals? Though the Fund is not like gold standard, gold still retains a prominent place in the scheme. The proposals are not designed to supplant gold altogether. The quota of each member is to be subscribed in gold to the extent of 25 per cent or 10 per cent of its net holding of gold and dollar. The initial parity is to be expressed in terms of gold as a common denominator, or in terms of the U.S. dollar. Thirdly, when the Fund is unable to secure sufficient quantities of a scarce currency it may buy it by the offer of gold. Thus the status of gold as the ultimate means of international payments is clearly recognised by this provision, and similar other provisions. Thus gold still occupies a predominant position, though it is no longer the King, and has been robbed of all powers of mischief. Though the rates of exchange are to be expressed in terms of gold, such rates are flexible, and can be altered from time to time. By creating a pool of national currencies, the Fund will provide a good substitute for gold for settling the ordinary balances between nations.

The International Bank.

The second part provides for the establishment of the International Bank for Reconstruction and Development. The need for such a Bank arose from the fact that almost all the countries have been ravaged by the war, and will require large quantities of capital for reconstruction and development. It is therefore essential that capital should flow from the rich countries to the capital-poor countries. It is clear that only the U.S.A. will be in a position to supply the needed capital. But the American investor has incurred so much loss in the inter-war years on its foreign investments that he may not

be willing to invest any more in foreign lands. The Bank is expected to solve this difficulty. The bank's chief function will be to guarantee loans made by private investors. It will not itself grant loans; it will only guarantee a lender against the risks of default. Thus the Bank will make it possible for a foreign country to borrow at reasonable rates of interest. The authorised capital of the Bank will be 10,000 million dollars, divided into 1,00,000 shares to be subscribed by the members. Twenty per cent of the subscription shall be paid, or subject to call as needed by the Bank for its operations. The remaining 80 per cent will be called up as needed. Two per cent of the subscriptions shall be payable in gold or U. S. dollars. The objectives of Bank are to provide capital for the economic reconstruction of the countries; to strengthen their monetary and credit structures by redistributing the world supply, etc. The business of the Bank will be concluded exclusively with governments or their agencies. All loans that the Bank guarantees must fulfil the following conditions: the payment of interest and principle must be guaranteed by the government of the borrowing member country; the Bank must be compensated for the risk it assumes, etc.

The Bank will make possible a resumption of international lending on sufficient scales to meet the needs of reconstruction. It can play a vital rôle in the right conditions. Its success will depend on the readiness of the creditor countries, chiefly the U.S.A. to accept payment of the services on their loans in goods or services.

CHAPTER XLVII

THE NATURE OF PUBLIC FINANCE

Public finance is that branch of economics which deals with the income and expenditure of the public authorities, including all types of governmental organisations and local bodies. The importance of the study of public finance is increasing now-a-days on account of the continuous growth in the activities of the government. Modern governments are no longer content with serving as mere police states. They have extended the sphere of their activities, and have undertaken the function of maintaining full employment in the country, and of introducing various schemes of social insurance for the industrial workers and the general population. They construct roads, warehouses, airports, irrigation canals, railways etc. They have set up and are maintaining schools, colleges, hospitals etc. They are undertaking the production and supply of water, gas and electricity. As a result, the expenditure of every government has increased, so that it now absorbs a large part of the national income. The activities of the government now affect the level of income, employment and output to a greater extent than before.

With this vast increase in the incomes and expenditures of the government an important change has been introduced in the study of public finance. The various aspects of the finances of the government are now studied with reference to their effects upon the production and distribution of the national income as a whole, and upon the volume of employment and direction of the productive resources. Less emphasis is now being paid to the separate treatment of the taxes and the expenditure of the government than was done in previous studies of public finance.

Public and private finance compared : In broad outline, the principles which govern private and public finance are more or less similar. But there are also important differences. The most fundamental difference that is usually stated is that while in the case of individuals, their expenditure is

determined by their income, the public authorities adjust their income to their expenditure. Thus the individual cuts his coat according to his cloth ; the state first decides the size of the coat, and then sets about gathering the necessary cloth. But this is putting the difference in much too an extreme form. There are occasions when the individual tries to adjust his income to his expenditure. He may decide to marry, and may put forth increased efforts to earn a larger income in order to meet the increased expenditure of a married life. Similarly, the government may have, like an individual, to adjust its expenditure to income. During depressions, when revenues fall off, a government may be forced to retrench its expenditure so as to keep it within the limits of its possible revenue. Thus the difference should not be exaggerated. But it remains true that there is some difference. It will be more apparent when we consider the ways in which an individual tries to balance his budget. If it became absolutely essential for an individual to incur additional expenditure in a year, he might meet it in two ways:—by trying to earn extra sums of money, or by borrowing from others. The public authorities will also adopt any or perhaps both of these two methods. But here a difference arises. The government may borrow from outsiders (*i.e.*, from a different country) ; or from itself (*i.e.*, from its own members), or it may print more paper notes. But an individual can only borrow from outsiders. He cannot borrow from himself, nor can he make his own I.O.U.'s legal tender.

There is another difference between private and public expenditure. Ordinarily, an individual will distribute his income on different items of expenditure in such a way as to obtain equal marginal utilities from each. Of course this is seldom done in a perfect way. The ideal for public expenditure should also be the same. But in case of the state, this ideal is seldom realised in practice. Owing to the existence of sentiment, or special interests, the government is often forced to spend money for worthless purposes. This tendency is very strong in young democracies, or where communal and racial feelings are high. But one point must be noted in favour of public expenditure. In strict theory, the individual is assumed to distribute his income on present or future needs

in such a way as to get equi-marginal utilities from both. But people discount the future at a high rate, and make inadequate provisions for the future. The state, however, does not discount the future at such a rate, and makes (or shall we say—should make) better provisions for the future than is done by the individuals.

Another important distinction lies in the fact that for the individual, it is desirable that he should strive to keep his expenditure within the limits of his income. But for the state an increase of expenditure may frequently increase the total national income, and improve the fiscal position of the state. The effects of state expenditure on production, employment and income are not similar to those of private expenditure. The success or failure of the fiscal policy of the state is to be determined by noting the effect of public expenditure upon the aggregate national income and employment.

Aims of public finance : What are the principles that should guide the levy of taxes and government expenditure? Different writers at different periods have suggested a number of principles. We propose to discuss some of them in the following paragraphs.

The principle of minimum expenditure: Not long ago it was the accepted rule that the best way to deal with the problems of public finance was to lay down this golden rule that the government should tax and spend as little as possible. This idea derived its justification from two strands of thought. One was the pervading spirit of individualism. Just as the best of all government was regarded to be *zero* government, so the best public finance was zero revenue and expenditure. The government was to interfere as little as possible with the liberty as well as the purse of the individual. Another idea was that the government spent money mainly for unproductive purposes, while the individuals spent it for productive purposes. Hence in the words of Gladstone, money should be left to fructify in the pockets of the individual.

But it is a wrong principle which would cut public expenditure to the bone. Taxes are not necessarily evil things. There are many taxes which perform socially justifiable

functions. A tax on alcohol checks consumption of liquors and thus does some positive good. A tax on imports which leads to the successful development of a home industry adds to the national dividend. Moreover, it is quite possible that the government would spend money for better purposes than the individual. The latter would have spent the money on (say) the race-course, while the government would spend it on the education of the poor. Public expenditure often increases the productive efficiency of the country. This does not mean that all public expenditure is a positive good. There are some writers who go to this extreme, and advocate an indiscriminate extension of the public expenditure. This is also not good. There are many taxes which do positive harm to the national income of the country. A highly steep income tax and death duty, for example, would check savings and curtail production. Similarly, all public expenditure is not good. Expenditure on unnecessary wars, for example, is clearly a waste.

The principle of maximum advantage: Another principle is that the government should conduct its finances in such a way as to secure the maximum social advantage. By taxation or by incurring debts, a government obtains its revenue and by a series of expenditure, this income is gradually disbursed. Thus there is a continual transfer of wealth from one set of persons to another and 'changes take place in the amount and in the nature of wealth which is produced.' If the transfers and changes, on the whole, bring about maximum social advantages including the full utilisation of all resources they are justified.

In considering whether the maximum social advantage is secured in a community or not, the following points should be taken into consideration. *First of all*, the character and composition of public expenditure should be considered. Some expenditure may be heavy, but if they are of the nature of capital investments, the ultimate welfare may outweigh the present burden. Other expenditures may not be heavy but may be quite unremunerative. If such expenditure, however, is incurred for preserving the community from external attacks and internal disorder, it is strictly justified from the standpoint of total welfare, though not from the point of

economic welfare. *Secondly,* the nature and methods of the taxing system employed are important. The same amount of revenue may be obtained through different methods of taxation, yet the burden of taxation under one method may be lighter than that under other methods. *Thirdly,* the ultimate effect of taxation on the productive powers of the community is important. If the tax system reacts on the will to save and on the power to save unfavourably, then clearly such a system is unjustifiable.

The principle of full employment : It is now being increasingly recognised in recent times that public finance should be managed in such a way as to establish and maintain full employment in the community. The rates of taxes and of public expenditure should be so fixed, at different levels of economic activity, that these will stimulate both public and private investment as well as mass consumption and so provide an effective demand sufficient to absorb all available labour into employment.[1] In any case, this policy involves large government expenditure designed to stabilise income and employment at a very high level. Often this principle is combined with some other aims like the provision of adequate social security for all persons, and the redistribution of incomes from the richer to the poorer classes.

[1] See the excellent statement by Dr. Schumacher in *The Economics of Full Employment.*

CHAPTER XLVIII

THE ROLE OF PUBLIC EXPENDITURE

In the finances of the government, expenditure, and not income, is the governing factor, and hence it is proper that we start with the discussion of the nature and effects of public expenditure. In order to understand the nature of public expenditure, it is necessary to classify the various items of expenditure in some logical manner.

Classification of public expenditure : Public expenditure has been classified in many ways. In fact, each writer has his own classification. Certain classifications are comparatively easy, such as those between national and local expenditure ; federal, state and local expenditure, or those between productive and unproductive expenditure. When a country has a unitary system of government, the major portion of its public expenditure is incurred by its central government, while the various local bodies also spend their revenues on such things as the local water supply, lightening, schools, roads and bridges etc. In a federation, the federal government spends its revenues on such common subjects as defence, posts and telegraphs, diplomatic services etc. ; while the states have also their separate treasuries and spend money on such services as police, jails, education, etc. In addition, local bodies incur some expenditure on purely local services. This distinction may be important from the constitutional and administrative purposes. But it is not of much significance in a theoretical study of public finance.

The same thing may be said of the other classification,— that between productive and unproductive expenditure. Productive expenditure was supposed to consist of those items which yielded some definite monetary return, while all others were regarded as unproductive. There are, however, certain items of expenditure, (for example, those incurred on education, public health etc.) that do not yield any immediate monetary return, but do ultimately increase the

productive efficiency of the people. This classification is also unimportant.

The most significant classification is that made by Prof. Pigou between *transfer expenditure* and *real expenditure.* When a government spends money in paying the salaries of the postmen, or of the police, it is using the services of those people ; whereas if it pays out money to the people who are unemployed, or to the refugees, this payment is not made in return for any service. The second type of expenditure is known as *transfer expenditure ;* and the first is called *real expenditure.* Transfer expenditure does not involve the using up of any services and is not incurred to pay for some services. Hence it is not regarded as a part of the national income of the country.

Public expenditure and national income : The effects of public expenditure upon the national economy may be studied from two standpoints ; effects on the volume of the national income and effects upon the distribution of income.[1]

The effects of public expenditure on the level of the national income will depend on the manner in which it influences the level of employment and output. When factors of production are idle, as during a depression, the expenditure of the government may provide employment to these idle factors and may, therefore, increase the national income. The public expenditure both on consumption and investment forms a substantial part of the total spending of the community, and when other items of total spending are deficient in maintaining full employment, public expenditure may be utilised as a balancing factor, and may be increased so as to stabilise the aggregate level of total spending in the community.

Public expenditure may also affect the volume of output in another way. It may influence the supply of enterprise either in a good or adverse manner. It may, for example, discourage risk-taking, and so affect the volume of private investment. There are also certain types of public expenditure which may add to, or diminish the productive efficiency

[1] For a further discussion, see Ch. LIV.

of the people. Much expenditure by the state, meant for fostering the youth, whether through education, or through the supply of free tiffin during school hours, or through the provision of cheap houses, is likely to result in increased efficiency. Some types of public expenditure may also affect the propensity to consume on the part of different classes of people, and so influence the volume of employment and output. In so far as the public expenditure confers greater benefits on the poorer sections of the community, and less on the rich, it increases the average propensity to consume and so raises the level of employment.

Effect of public expenditure on distribution : In many places of our book it has been argued that a less degree of inequality than that existing at present is desirable from the point of maximum satisfaction. The question is how far public expenditure reduces this inequality. Two broad divisions as regards expenditure may be made, *viz.*, expenditure which benefits individuals, and expenditure which benefits the society at large.

As regards the first class of expenditure there are many items which involve a direct transfer of wealth to the poor. Taxing of incomes at progressive rates and paying old age pensions to the poor mean such a direct transfer. Direct transfers of money are, however, rare. The more usual method of transfer is by the provision of free goods and services to the poorer classes, *e.g.*, free medical service, free education, etc. Here also the effect is the same, the poor gain at the cost of the rich. Inequality declines and total satisfaction increases.

Expenditures which benefit all members of the country in a locality, as for instance, good roads, or free water supply to a town, affect the distribution of wealth no doubt, but it is very difficult to trace its effects and to allocate its incidence upon different persons.

But the great drawback of attempting a redistribution of wealth by public expenditure is that it may reduce saving, *first*, of those who are taxed, and *secondly*, of those who receive the benefits of such expenditure. If there is a reduction of saving there will be less to distribute in the future.

As regards the effects of expenditure the Colwyn Committee held, "its effect on production seems to be in conflict with that on distribution. But upto a certain point this is not the case. The difficulty is to know where the balance should be struck".[2] The principle of maximum social advantage should be kept in view and all expenditure should be judged from that standpoint.

[2] *Colwyn Committee Report*, p. 105

CHAPTER XLIX

SOURCES OF PUBLIC INCOME

Sources of public income : The revenue of a government may be derived from taxes and from sources other than taxation. These non-tax sources may be further classified as follows:—(*a*) fees, (*b*) prices, (*c*) special assessments, and (*d*) fines and penalties. Some revenue may be derived from voluntary gifts, but these are negligible.

A *tax* is a compulsory contribution levied on the wealth of an individual by the government of a country without reference to any benefit. A tax is, therefore, a compulsory payment, and as we shall see herein it differs from price. The second feature is that the tax must be paid whether the individual derives any special benefit or not. "The essence of a tax, as distinguished from other charges by the government, is the absence of a direct *quid pro quo* between the tax-payer and the public authority." A rich person cannot claim that he would not pay taxes to support the public schools because he has no children. A tax is paid for the general or common benefits conferred by the government on all tax-payers. There is no question that the taxes should only be paid in proportion to the benefit enjoyed by the tax-payer.

A *fee* is a payment levied by the government in respect of services performed for the benefit of the individuals. The services are usually undertaken for the purpose of control and regulation. It differs from a tax in that it is a payment made for a special benefit enjoyed by the payer, whereas a tax is paid for common benefits. The amount of the fee should be equal to the cost of rendering the service. That is, the payment made is usually proportional to the special benefit. In actual practice, fees exceed the cost of service.

A *"price"* means the revenues derived by the government from the sale of services and goods. The government sometimes conducts many business like an ordinary businessman, and the revenue derived from the sale of such

commercial concerns is regarded as price. The government sells timber from its forests, salt from its factories. A price, unlike a tax, is not a compulsory payment. If I do not buy post cards, or do not travel in railways, I am not obliged to pay anything to the government. Those who do not avail themselves of these goods and services escape payment. The price is also paid in return for some special benefit enjoyed. The service for which a fee is paid is considered more important for the public than that for which a 'price' is paid. The element of public purpose is more prominent in the case of fees than in the case of prices.

'Special assessment' is a payment made by the owners of real property in respect of any improvement made to their property by the public authority. When the Improvement Trust opens out a park in a locality, the owners of adjoining sites are benefited by the improvement as the value of lands rises. If the Trust levies taxes on these owners determined with reference to the benefit enjoyed by the owners *i.e.*, increases in land values, it will be "a special assessment." The payment is made for, and in proportion to the special benefit. Here it must be noted that the improvement must be in pursuance of a public purpose.

It is not always easy to make clear-cut distinction between these different sources of public income. Fees and prices are often found indistinguishable from taxes. Whenever the government levies fees at rates higher than the cost of providing the services, the levy pertakes of the character of taxes. The court fees have been utilised in India to some extent for the purpose of taxing succession to property. In case of a public enterprise, the government may exercise its monopoly power in such a way as to raise the price much above what would have been charged under competitive conditions. The French government utilised its monopoly over tobacco production in such a way as to contribute substantially to the treasury. In these cases, prices charged by the state pertake of the character of taxes. Hence it has been rightly said that taxes, fees and prices shade into each other.

CHAPTER L

PRINCIPLES OF TAXATION

The decision to levy any tax is not a simple one. The authorities have to take a large number of points into consideration. They have, first of all, to pay attention to some practical considerations like the justice of the proposed tax structure, the cost of administration and the convenience of the taxpayers. Some of these practical considerations have been embodied by Adam Smith into a number of canons. Secondly, the authorities have to keep in mind the principles on which the taxes are to be based. For example, is the tax burden to be distributed on the basis of benefits received, or on the basis of the ability-to-pay, or so as to impose the last aggregate sacrifice on the community? Finally, they have to decide the rate structure to be followed in levying particular taxes. Is the tax to be levied on proportional, progressive or regressive basis? All these considerations are not, of course, separate; they are, to a large extent, related to one another. For example, if the proposed tax structure is to ensure justice, it may have to be based on the ability-to-pay principle. The latter, in its turn, leads inevitably to a progressive rate structure. In the subsequent sections we propose to discuss these points one by one.

Adam Smith's canons of taxation : Adam Smith, the father of modern Political Economy, laid down certain canons regarding taxation, and any book of Economics would be incomplete without enumerating and examining them.

(1) *Canon of Ability or Equality.*—"The subjects of every state ought to contribute towards the support of the government as nearly as possible in proportion to their respective abilities; that is, in proportion to the revenue which they respectively enjoy under the protection of the state."

By this canon Adam Smith implied that the criterion of payment of taxes should be that the ability to pay, or the sacrifice caused by the taxation, would be equal for

everybody. Obviously a rich man is able to pay taxes in a higher ratio than his poorer brethren. Hence the system of taxation should be progressive. But there is no unanimity among economists as regards the interpretation of this canon. Some maintain that Adam Smith implied that the tax system should be progressive and they quote approvingly Adam Smith in another part of his *Wealth of Nations* where he considered it to be "not very unreasonable that the rich should contribute to the public expenses not only in proportion to the revenues, but something more than in proportion." But others would lay stress on the word 'proportion', used by him in the original canon.

(2) *Canon of Certainty.*—"The tax which each individual is bound to pay ought to be certain and not arbitrary. The time of payment, the quantity to be paid ought all to be clear and plain to the contributor and to every other person."

The man paying the tax should know the exact amount which he is to pay during the year so that he may adjust his expenditure to his income after the payment of taxes.

The state ought also to be certain about the amount of tax it is going to obtain, so that its budget may be balanced.

(3) *Canon of Convenience.*—"Every tax ought to be levied at the time or in the manner in which it is most likely to be convenient for the contributor to pay it."

This is a rule of obvious importance. If it is violated there will be unnecessary hardship on the part of the taxpayer. Hence the tax on agricultural land should be collected after the harvesting time.

(4) *Canon of Economy.*—"Every tax ought to be so contrived as both to take out and to keep out of the pockets of people as little as possible over and above what it brings into the public treasury of the State."

This canon, according to Adam Smith, means that the cost of collection should be kept as low as possible. The cost of collection should be minimum consistent with administrative efficiency. If the major portion of a particular tax is consumed in collecting the tax, there cannot be any justification for it. On this ground taxing of incomes below a particular sum is not attempted in any country.

An examination of the canons : First of all, a distinction should be made between the first canon and the rest of the three. The first canon is concerned with the principle of taxation, while the others are concerned with mere administrative rules of taxation.

As regards the principle of equality or ability, it may be pointed out that the canon is vague and ambiguous. It is not based on any one distinct principle. It is based partly on ethical and partly on economic considerations. It is ethical because it refers to justice in taxation; it is economic because it is based on the economic capacity of the tax-payer, *i.e.*, the revenue which he enjoys under the protection of the state. The canon is vague because there is no fixed standard by which to measure ability. It still remains to be decided whether property, revenue or net revenue is the measure of ability. Further, ability has sometimes been construed to mean equality of sacrifice. But this introduces complications. In accepting this meaning, we pass from an objective standard to a subjective or psychological standard. Again, the principle is ambiguous because it does not definitely lay down whether the principle of proportion or progression is to be accepted.

The principles of *certainty* and *convenience,* though fundamentally sound, are of comparatively little importance now-a-days. Any tax system is not worthy of the name, if these principles are overlooked; yet these principles pale into insignificance in comparison with other principles which Adam Smith could have included, but which he did not. *Productivity* and *elasticity* of the tax system are of higher importance than these two.

Lastly, the canon of economy is given a wider significance now-a-days than that given by Adam Smith. Adam Smith mainly meant by 'economy' that the cost of collection should be very low. A tax system might be economical from the point of collection, but it may have a disastrous effect from the standpoint of national economy as a whole. A very steeply graduated income-tax would satisfy this canon as it could be collected with a very small expenditure of money. But it would not be economical from the broader

national standpoint as its ultimate effect will be a shrinkage of the national dividend. A tax system should be economical not only from the standpoint of the present, but it should be so contrived that it might prove economical even in the future. In other words, the tax should be equitable as not to press too heavily on the rich, for thereby the growth of capital is asserted. Thus the principle of economy is ultimately bound up with the principle of equity in taxation (more of this later in the chapter).

Two more canons, *viz.*, productivity and elasticity formulated by later writers should be considered in this connection. Taxes should be productive. The foremost consideration of a practical financier is to get sufficient funds for the state. He naturally judges of the merits of a tax by the amount of its yield. Therefore that kind of tax is the best which ensures an automatic increase of revenue with the increase in the number of population and its incomes. A tax on commodities fulfils this requirement. As population increases, more commodities are consumed and the tax yields larger and larger revenues.

Productivity.

Another important canon of the tax system is that it should be *elastic*. The tax should increase or decrease according to the needs of the state and according to the length of the tax-payers' purse. Otherwise it would cause hardship to the people. Elasticity is indeed no new principle, but a combination of the canons of productivity and economy. Flexibility is a highly desirable quality of a tax system and no practical financier can overlook its importance in the selection of taxes.

Elasticity.

Principles of Taxation

Many theories have been put forward to guide the way in which the state should raise its revenue from citizens. In this section, we shall examine the more important of the theories one by one.

(a) Benefit theory : According to this theory, the tax should be proportional to the benefit enjoyed by each

individual under the protection of the state. The more benefit an individual enjoys from the activities of the government, the more taxes he should pay towards meeting the expenses of conducting these activities. There are some services which afford special benefit to individuals and others which confer general benefit on all. Cohn based his classification of public expenditure on this broad division. The benefit theory of taxation follows from an extremely individualistic notion of state functions.

But this theory is clearly inadequate as a principle of taxation. A tax, we know, is a payment made for the common benefits rendered by the state. The benefit to each individual cannot be measured separately. For example, how can we measure the benefit that we receive from the army and the police, or from a sound judicial system? The amount of tax that we pay bears no relation to the benefit that we enjoy, if it did, it would cease to be a tax. Moreover, according to this theory, the poor should pay more tax than the rich, for they enjoy more benefits from governmental activities than the latter. Clearly, this is absurd. But this theory may be justified from one standpoint, *viz.*, 'if the relation to the state of citizens *en masse* rather than the individual tax-payer be considered, there is a sense in which the aggregate of taxes represents payment for the aggregate of collective benefits rendered by the state.'[1]

(b) The cost of service principle : More individualistic in outlook is the cost of service principle. This theory states that taxes are levied for meeting the actual costs undergone for rendering services by the states. This principle can, of course, be applied in determining postal rates and railway rates where railways are state-owned and in some other cases where specific services are rendered. But with regard to the major portion of the taxes, the theory is clearly inadequate. The cost of services rendered to all subjects in common cannot be apportioned to each individual as it is not capable of determination. Further, under this principle, the receiver of old-age pensions should return not only the pension but also some part of the charge of the cost of administration of the

[1] Lutz. *Public Finance*, p. 295.

scheme. This is clearly absurd. Hence the theory has been abandoned long ago.

(c) The "ability to pay" theory : According to this theory everybody should pay taxes to meet the expenses of the state in accordance with his ability to pay. Government is a common enterprise carried on for the good of all. Therefore, all should support it upto the limit of their capacities.

That this theory conforms to our ideas of justice is clear. The trouble comes with the definition of "ability to pay." What measures the ability of an individual? Previously, it was thought that the ownership of *property* was a good measure of ability. Those who possessed more property should pay more. But soon it came to be seen that property was not a good test of ability. There are many people who possess a large income, but have no property. A man may earn a large income by means of his labour ; he may spend lavishly without amassing any property. A surgeon, for example, may earn a very large income by dint of his skill, but he may not possess any property worth the name. His ability to pay is large, but he would escape taxation if only property is taxed.

Test of ability to pay.

Later, it was asserted that *expenditure* was a better test of ability. Those who spend more can, it was assumed, afford to pay more taxes. So a tax on personal expenditures would, it was thought, satisfy the principle of ability. But because a man has to spend more did not mean that he has a greater capacity to pay taxes. A person with more dependants would have to spend more money than another who had no dependants at all. Clearly, the ability-to-pay of the first individual is less than that of the latter. But according to this interpretation, the first man would be called on to pay higher taxes. This is not justifiable.

Taking all things into consideration the *income* earned by an individual was the best index of ability. Hence in modern tax systems, efforts are made to impose greater burdens on the higher income-holders and less on the lower-income groups. Even then money income is not a completely satisfactory test of ability. Two persons might have the

Other tests besides income.

same money income; yet their ability to pay taxes might be different. They may have different obligations. One may be a bachelor, while the other may have to provide for a large family. The attempt to tax them at equal rates is not justifiable. Secondly, an individual's income may be derived from property; while that of the second may be the result of his labour. The latter, having no property, will have to save a portion of his income to provide for the future, which the former need not do. Their ability to pay is thus different.

Lord Stamp says that in order to find the true criterion of ability, we have to take the following factors into consideration, besides, of course, the money income of the individuals. *First,* the period of time during which the income was earned should be considered. It is the usual practice in all countries to levy the income-tax on incomes earned during the previous year. That is, income earned during 1947 is taxed during 1948. But in 1948, the business-man may run into heavy losses, and it will be difficult for him to pay income-tax on last year's profits. Hence in order to conform to the principle of ability, incomes should be taxed currently during the period in which they are earned. This is the basis of the argument in favour of "Pay-as-you-earn" system of income taxation. *Secondly,* from the income we should exclude the depreciation charge for the replacement of capital. A *third* consideration is whether the income was derived from property, or from personal efforts; income from property or unearned incomes should be taxed at a higher rate than the labour incomes or earned incomes. *Fourthly,* the size of the family should also be taken into account; an individual having a large family should be asked to pay less than another with no or a smaller family. *Lastly,* whether the income contains any surplus or not is also a relevant factor. All these are recognised in modern income tax laws.

Ability to-pay and the theory of sacrifice: Another interpretation of "ability" runs on the lines of sacrifice. It assumes that the payment of taxes inflicts a sacrifice on the tax-payer. The sacrifice is measured by the amount of

satisfaction that must be given up through the payment of taxes. Two schemes of distributing the sacrifice have been formulated,—the principle of equality of sacrifice, and the principle of minimum or least aggregate sacrifice.

The *Principle of Equality of Sacrifice* states that taxes should be so imposed that the sacrifice made by each tax-payer should be equal. This principle, therefore, makes for the progressive system of taxation. But the main difficulty of this principle is that it is not possible to calculate the subjective loss undergone by an individual on account of the payment of taxes.

According to the *Principle of the Least Aggregate Sacrifice,* the tax system should be so arranged that the total sacrifice undergone by tax-payers might be the least. The aim of all tax systems is how to secure the maximum social advantage. That is best achieved if the total sacrifice of the society is the least. This is the justification of this principle. The principle is also based on the marginal utility theory.

Least aggregate sacrifice.

According to that theory, the larger the income, the less is the utility of money. Hence the utility yielded by the last slice of income of those whose income is the highest is the least. If only these are taxed, then the sacrifice undergone is the minimum. The state is, therefore, to go on taxing the tops of the largest incomes until its needs are fulfilled. Thus according to this principle, everyone need not pay tax.

The chief obstacle to the successful carrying out of the plan is that it would ultimately retard saving and diminish people's will to work. If incomes above a certain maximum are taxed away, people would not exert themselves to earn those incomes. Hence taxation would gradually fall upon lower and lower incomes. The future capital of the country would diminish and with it the national dividend. Hence in order to achieve the least aggregate sacrifice, the state should distribute the burden of taxation in such a way as not to press too heavily on the rich and to compel them to discontinue from working and saving, and should take into consideration the present and the future interests of the country as a whole.

Taxes as an instrument of economic policy : Taxes have not always been levied on the basis of the principles of ability or benefit or sacrifice. On many occasions subsidiary aims were pursued by the government in connection with the imposition of taxes. Thus almost all countries have attempted at one time or other to use the system of taxation for the purpose of protecting home industries and for encouraging exports. Thus higher import duties have been levied on foreign imports in order to discourage the imports of these goods, while bounties had been given out of the revenues to certain domestic goods in order to encourage their export. A second principle that has been adopted in many countries is to use taxes in order to reduce the consumption of the things regarded as undesirable. For example, very high duties are levied on alcoholic liquors and other intoxicants not to raise revenue, but to discourage their consumption. In recent times many other subsidiary principles are being followed with regard to the tax structure. During the last war the central aim of the government was to divert the factors of production to the making of goods required for the conduct of the war. It was, therefore, considered necessary to curtail the consumption of the people in certain directions, for example, of goods which were required for war purposes. This might be done by the levy of income tax at very high rates in order to leave only a small amount of income in the hands of the tax-payers. As a result, they will be forced to cut down their consumption. But as the imposition of the income tax at very high rates may reduce the incentive to work, the government might instead adopt the policy of levying sales taxes at high rates on the goods the consumption of which had to be reduced. Thus the machinery of taxation had been utilised to facilitate the transfer of resources from peace-time production to the war production.

Taxes and the maintenance of full employment : The system of taxation is also now being utilised to counteract the changes in the levels of income and output due to the occurrence of the trade cycle. A depression is due to the deficiency in the total spending of the community. Such a deficiency may be sought to be remedied through remissions

of taxation. If the rates of income tax are lowered, if business taxes are reduced, people would have more money to spend and would probably spend more money. If it is considered necessary to increase the propensity to consume, the government may lower the rates of sales taxes ; or it may take steps to increase the rates of taxes to be paid by the richer classes, and reduce the taxes paid predominantly by the poorer section of the community. Such a redistribution of taxes would leave more money in the hands of the poorer classes whose propensity to consume is higher than that in the case of the rich. Thus the system of taxation is now being manipulated for two primary purposes, *viz.*, to secure a better distribution of income among different classes of people, and to counteract the cyclical fluctuations in income and employment.

Principles of proportion and progression in taxation : The next question that arises is, given the right principle of taxation, what method should we adopt in distributing the burden of taxes? It should be noted in this connection that a tax may be proportional, progressive, regressive or degressive. Each of these terms requires definition. A *proportional* tax is that which takes away exactly the same percentage of the value of the income or property in taxes, whatever the amount of income. A 10 per cent tax on income, whatever may be the total income, is an instance of this tax. A *progressive* tax is that which takes away a larger and larger percentage of the value of the income or of the property in taxes as the income or the property increases in amount. If the tax is 10 per cent. on those whose incomes are not more than Rs. 5,000 ; 15 per cent on those having not less than Rs. 10,000 ; 22 per cent on those having Rs. 15,000, it is progressive. A *regressive* tax is just the reverse of a progressive tax. Here the rate of tax diminishes as income increases. A *degressive* tax is that which increases with the increase of income, but the rate of increase of tax diminishes with every increase in the income tax. In actual practice, we are concerned with proportional and progressive systems of taxation.

According to the principle of proportion, therefore, the taxpayers, whatever their income, are to pay a fixed

percentage of their income as taxes. In his first canon of taxation, Adam Smith stated that taxes should be proportional to one's income, although in another portion of his writing he was in favour of "something more than in proportion". The basis of this principle is that it is not the purpose of taxation to disturb the existing distribution of wealth. If each taxpayer pays in a fixed proportion, the relations between different income receivers are undisturbed. The merit of this system is that it is extremely simple. As Say puts it, "proportional taxation does not need definition ; it is the rule of three."

Principle of Proportional taxation.

But simplicity is not the only objective in finance. It must also satisfy some equitable principle. As everybody knows, to take Rs. 100 from an individual whose annual income is Rs. 1,000 and Rs. 1,000 from another whose income is Rs. 10,000 may appear simple, but it is unjust. The ability to pay increases more than in proportion as the money income increases.

Progressive taxation : Due to the defects of the system of proportional taxation, the principle of progression was gradually adopted in modern tax systems. The main justification for the progressive system of taxation is that as a person's income increases, his ability to pay increases at a higher ratio than his income. Hence the rate of taxes should not be proportional, but progressive. *Secondly,* the principle of equality of sacrifice also leads to progression. As income increases, the marginal utility of money decreases. So to take Rs. 5 from a man having Rs. 100 and Rs. 50 from another with Rs. 1,000 does not impose equal sacrifice on them. The poorer man makes greater sacrifice than the second person. In order to bring about an equality of sacrifice, the man having the higher income must pay taxes at a higher rate. The principle of the least aggregate sacrifice leads to still greater progression.

Arguments for Progressive taxation.

It has, however, been argued that neither the principle of ability or sacrifice nor that of the utility theory can be used to justify progressive taxation. There are no satisfactory tests for measuring ability or utility. But apart from

these, one can justify the system of progressive taxation by the argument that the existing distribution of wealth is inequitable, and the state should try to lessen inequality of incomes by means of higher taxation of the rich. There are very few economists who deny the necessity of lessening the present inequality of incomes, and taxation is a good weapon for effecting this. Of course, it is true that this remedy is only a palliative, and does not go to the root of the problem, yet this is no reason why it should not be adopted. Moreover, higher taxation of the richer classes is also advocated on another ground. The rich have usually a very low propensity to consume. Hence as a community grows richer, the propensity to consume tends to decline, as a result of which there may be a deficiency of effective demand for goods and services. In other words, demand becomes insufficient to absorb the available labour force into employment. The remedy for this state of chronic unemployment is higher taxation of the rich so as to increase the propensity to consume. *Lastly,* it is argued that the modern state is an organic whole. "The highest rule of behaviour for the individual in his ordinary social relation is that the 'strong should aid the weak. It is surely equitable that the broadest shoulders should bear the heaviest burden."

The main difficulty of the theory is that even if it is granted that utility of money diminishes as income increases, there is no method of determining the rate at which this decline takes place. 'There is no means of knowing the actual rate of progression which impose equal sacrifice. The rate of graduation is bound to be arbitrary.

Single vs. multiple tax system : There has been a constant tendency towards the simplification of the tax system. It has been argued by various persons that the tax should be levied on some single item according to some principle of equity. The Physiocrats advocated a single tax on the economic rent of land, because they thought that it was on rent that ultimately all burden of taxation fell. The advocates of the single tax system hope to effect a redistribution of the world's wealth by their method of taxation.

Henry George's scheme for a single tax on land was

advocated with the same object. His idea was that a tax on rent did not check industry. In this conclusion he was obviously right. But the defect of his theory is that such a tax would exempt all persons who do not invest their incomes in land. A rich millionaire would be thus exempted while a poor man owning a house would have to pay taxes.

Henry George's Scheme.

Another proposal for a single tax is that of taxing the incomes only. Of course it is a better taxable object than the former. But it is also defective. *First*, the tax on small incomes is difficult to collect and in the long run uneconomical; *secondly*, it may check saving; *thirdly*, it leaves out some sources, such as windfalls, which are highly desirable objects.

Single tax on Incomes.

The desire of the advocates of the single tax system is to secure a single and inexpensive form of taxation. The cost of collection would be very small and the incidence would be exactly known. But some general criticism can be advanced against any theory of single tax system. (*a*) Any single tax which may seem fair and equitable from a theoretical study may be inequitable as regards incidence as between different individuals. The anomalies under a single tax system may be corrected by a multiplicity of taxes. (*b*) The needs of revenue in a modern state are so large that it is very difficult to devise a single tax system which can satisfy its needs. (*c*) The use of a single tax should not secure the advantage that is at present obtained by reaching the different taxable capacities, *viz.* income, consumption, inheritance, etc. (*d*) Lastly, evasion may be easy under this system, but it will not be so easy when there is a system of checks and counterchecks under a multiple tax system.

Defects of the single tax system.

The defects of the previous system and actual practice have led to the opposed doctrine of Arthur Young. "If I were to define a good tax system, it should be that of bearing lightly on an infinite number of points, heavily on none." This extreme view is neither theoretically justified nor adopted in practice. Taxes on all commodities, on transfer of goods, and on different forms of production would be extremely prejudicial to the development of industry and

inconvenient to payers and very costly in collection'. The customs of England before 1845 were very complicated; the reforms of Huskisson simplified them a good deal.

The best method then seems to be neither a single tax system nor a multiple tax system, but a mean between the two, that may be called a system of 'plural' taxation following Bastable.* It is best to rely on some big taxes which fall generally on the rich and a few others which fall more or less on every person of the community. Income tax, inheritance tax, tax on luxuries would serve the first purpose. Taxes on commodities of wide consumption would reach all classes of people.

The best method is the plural tax system.

Characteristics of a good tax system : From the above discussions we are now in a position to sum up the characteristics of a good tax system. *First,* the tax system as a whole should satisfy the canons of taxation as already laid down. *Secondly,* as regards the distribution of the burden of taxation the incidence of not only the general tax system but also the individual taxes should be carefully considered. Those taxes are to be preferred which entail the least aggregate sacrifice on the community and satisfy the canon of economy from the standpoint of production and distribution in the present as well as in the future. The burden of taxes should not be too heavy on any one point, but should rather be determined according to the ability of the tax-payer. *Lastly,* the system of plural taxation is to be preferred to the systems of single and multiple taxes. As these have been already discussed, we need not repeat them any more.

Taxable capacity : The taxable capacity of a community has been variously defined. The more usual definition is that it is the surplus that remains after deducting from the national income the amount necessary for maintaining the capital of the country and efficiency of the people unimpaired. The definition is, of course, vague and gives rise to many difficulties. How are we to determine the allowances for maintaining capital intact and for safeguarding the peoples' efficiency? In normal times, we must not only make suitable allowance for the depreciation and wear and tear of capital, but allow for a certain rate in the growth of that

capital, so that the national income may gradually rise. On what basis are we to make allowance for this? The concept is, therefore, beset with many pitfalls. It is purely relative, depending on a variety of factors tangible and intangible, some of which it is difficult to measure satisfactorily.

Factors on which tax-capacity depends.

On what factors therefore does taxable capacity depend? *First,* it depends on the psychology of the people. There may be times, especially during a war, when people may be willing to undergo greater sacrifices than at other periods. Taxable capacity therefore increases during such periods. During the last financial crisis, the British people became more willing to help the efforts of the national cabinet to cope with the budgetary difficulties and the spectacle of the long queues of people, waiting to pay their taxes showed that the taxable capacity of the people had for the time increased. *Secondly,* taxable capacity depends on the distribution of the national income within the country. When Rs. 20,000 are owned by one individual, his taxable capacity is greater than that of twenty others who own Rs. 1,000 each. The more unequal the distribution of income, the greater is the taxable capacity. *Thirdly,* it depends on the size of the population relative to the national income. If the latter increases in a greater ratio than the former, the income per head increases, and so also taxable capacity. *Fourthly,* it depends on the general character of the country's industrial organization. If it makes a greater demand for capital equipment, greater allowance must be made on that account from the national income. Taxable capacity at any particular time will be less. On the other hand the national income of such a country will also be higher, and taxable capacity will rise. *Fifthly,* it depends on the standard of living of the people because that will determine their efficiency, ability and willingness to work. *Sixthly,* it depends on the character of the tax system. Taxable capacity will increase if a greater reliance is placed on direct taxes. A greater revenue could be earned through direct than through indirect taxes without injuring the productive activities of the nation. *Lastly,* taxable capacity depends on the nature of the government expenditure. If

the revenue is spent on education, sanitation, etc., the taxable capacity will ultimately increase. Whereas if the revenue is spent on building competitive armaments, the taxable capacity is thereby diminished.

CHAPTER LI

SHIFTING AND INCIDENCE OF TAXES

Meaning of shifting and incidence : When a tax is imposed upon a person, he may try to pass it on to the shoulders of others. This process of transferring the money burden of the tax is known as shifting. Shifting ends in incidence. The incidence of a tax is the direct money burden of the tax ; and the problem of incidence is to find out the person on whom the money burden of the tax falls ; out of whose pocket does the money which is received by the government come? Or, in whose pocket would the money have remained if the tax was not levied by the government? This is the problem of incidence. The *impact* of a tax is upon the individual who first pays the tax to the government. He will try to *shift* the burden to the shoulders of others. The *incidence* of the tax is upon the person who bears the ultimate money burden of the tax.

A tax also imposes other burdens upon the individuals. It is necessary, therefore, to distinguish between money burden and real burden, and between direct and indirect burden. The direct money burden is measured by the amount of money paid to the treasury in taxes. The direct real burden is determined by the amount of sacrifice of economic well-being undergone by the tax-payer. This is the *effect* of a tax. There may be indirect money and real burden of a tax. The seller of a commodity upon which a tax has been levied has first to pay the tax. He can, of course, get back the whole amount of the tax from the buyers by charging higher prices. But this generally takes time, and to the extent the seller loses interest on the amount paid as taxes. This is the indirect money burden of the tax. Similarly, the indirect real burden is the indirect effect of the tax. When the price of a commodity is raised by a tax, the buyers would be forced to purchase less of it. This means a sacrifice of well-being. This is the indirect real burden of the tax.

In the problem of shifting, three factors are of importance, *viz.*, the direction of shifting, the form of shifting, and the measure of shifting. As regards the direction of shifting, the shifting may be either forward or backward. If the importer has to pay a tax, he will try to shift it forward on to the consumers; if he fails in that he will try to shift it back to the producers. As regards the form of shifting, the shifting may be made either by charging high prices, or the prices may remain the same, while the quality of the commodity deteriorates. The measure of shifting depends upon many factors, which we shall shortly discuss, but here it may be safely laid down that sometimes the whole tax may be shifted to the consumers or producers; while at other times the incidence may be shared between the producer, the businessman and the consumer.

Direct and indirect taxes : The distinction between direct and indirect taxes turns upon the question of impact and incidence. A tax is a direct one when the impact and the incidence are on the same person. That is, the person from whom the tax is collected is also the person who bears the ultimate money burden. He cannot shift the burden to others. An income tax is a direct tax. It is levied on the person who earns the income and is ultimately borne by him. Where the impact and the incidence of a tax are on different persons, it is said to be an indirect tax. Here some person first pays the tax, but he is able to shift the burden to the shoulder of others. A tax on a commodity is an indirect tax. Though the seller first pays it, it is expected that he will pass it on to consumers in the form of higher prices. The distinction between two taxes is not always so clear cut. Sometimes, the seller or the importer may be unable to shift the burden to buyers; he may have to bear the ultimate money burden.

Merits of direct taxes : The advantage of a direct tax is that it is progressive in character. It can be so graduated that the heavier burden falls on the rich, and persons whose incomes fall below a certain level may be exempted from the tax. Thus it satisfies the first and foremost principle of taxation, *viz.*, equity or ability to pay. A second advantage

Advantages of direct taxes.

of a direct tax is that it is *economical.* The cost of collection is very low and no wastage is incurred. A third advantage is that it satisfies the canon of *certainty.* The tax-payer knows how much he is to pay and the state may also be assured of a steady and certain income. Fourthly, direct taxes are *elastic.* They can be easily adjusted to meet the needs of the state. The yield of the tax can be increased or decreased simply by changing the rate of graduation. Fifthly, a direct tax is highly productive. With the increase in population and wealth of the country, the yield of the direct taxes automatically increases. Lastly, by the payment of direct tax, the citizen is made to feel the burden of the tax. He understands his responsibility to the state. His civic consciousness is roused and he takes a direct interest in the affairs of the state and particularly in the management of government finance.

Disadvantages of direct taxes.

As to the *disadvantages of the direct tax,* the first is that it is very inconvenient from the standpoint of the tax-payer. He has to supply detailed accounts and compile the forms. Further, the payment is to be made in lump sums at intervals. A person gets his income in driblets, but has got to pay taxes in lump sums. This may cause much inconvenience. Secondly, a direct tax is a tax on honesty. If a false account is submitted, the burden of the tax may be very light. Under such circumstances, the temptation to avoid the tax by submitting false accounts is too much with many persons. Thirdly, the graduation in any direct tax is bound to be arbitrary and according to the whims of the tax-levying authorities.

Taking the balance of advantages and disadvantages, we may safely conclude that the direct taxes are on the whole equitable, economical, elastic and productive.

Advantages of indirect taxes.

Merits of indirect taxes : The first and foremost argument in favour of an indirect tax is that it is a means of reaching the poorer classes on whom it is difficult to levy direct taxes. It is argued that every person should contribute something towards the maintenance of the state. But this is a matter of opinion. The second argument for maintaining

an indirect tax is that it makes the basis of revenue fairly broad. Heavy taxation at anyone point may have disastrous effect on the social and political order. The use of some indirect taxation is valuable because it enables increased revenue to be raised at different points instead of by exclusive concentration on direct taxes. Thirdly; indirect taxes are very convenient. The payments are made in driblets with every purchase of a commodity. As we never purchase too much of a commodity at one time, the burden is seldom felt to be very heavy. Fourthly, it is hardly possible to evade the tax. Of course, there are sometimes sales of smuggled articles, but they are exceptions which prove the rule. Fifthly, if imposed on articles of inelastic demand, an indirect tax is fairly elastic. Its proceeds can be increased with a change in the rate of the tax. Lastly, indirect taxes on harmful luxuries such as wine, etc., and on luxuries consumed by the rich will reduce their consumption and may direct the purchasing power of the community towards more beneficial consumption.

Disadvantages of indirect taxes.

The *disadvantages of indirect taxes* far outweigh their advantages. The foremost objection is on the ground of equity. An indirect tax is inequitable. It is regressive in character. It falls more heavily on the poor than on the rich. In order to be productive, an indirect tax must be levied on necessaries. But a tax on necessaries is harmful to the interests of the poor. Thus it aggravates inequality; but 'taxation should mitigate and not aggravate inequality in the distribution of income.' A second disadvantage of this method is that the yield from indirect taxes except from necessaries is bound to be uncertain. If the tax be high, the demand will shrink and with that the yield.

Lastly, indirect taxes are uneconomical. The cost of collection is often fairly heavy. The tax-payer may pay more than the actual tax levied. The producer or the importer generally pays the indirect tax. Some months must elapse before he can get back the tax from the sale of his commodities. He may, and often does charge an interest for the tax which he has advanced. Thus the price of the taxed article may go up by more than the amount of the tax.

Opinion differs as to what portion of the total revenue of the state should be raised from indirect taxes. In old times, these taxes contributed the major portion, as the machinery of direct taxation was not perfected in those days. As late as the latter part of the 19th century, Gladstone declared that as between two charming sisters, he would like to be impartial between the two types of taxes. In recent times opinion has veered to the point that while indirect taxes should not be given up, the major portion of revenue should be raised from direct taxes.

General principles governing the incidence of taxation : Two general propositions governing the incidence of taxation may be laid down. The first is that, other things being equal, the more elastic the demand of a commodity, the more likely is it that the burden of taxation will be upon the seller. The second is that, other things being equal, the more elastic the supply of a commodity, the more likely is it that the burden of taxation will fall on the consumer. When the demand for the commodity is inelastic, the purchaser would not reduce this demand even though the price goes up by the full amount of the tax. In such a case the incidence is on the buyers. But if the demand for the commodity is highly elastic, the purchaser would reduce consumption as soon as the price is raised. Hence the chance is that the burden of the tax will fall on the seller. Similarly, when the supply is elastic, with a rise in price the demand may fall, but with it the supply will also be curtailed. The producer will be in a position to raise the price by the amount of the tax. "The sellers in short try to put the incidence on the buyers by reducing supply, the purchasers try to put it on the sellers by reducing demand. The relative ability of the two groups to carry out their objects, with the minimum cost to themselves, determines the result".[1] In considering the elasticity of supply, we have to take into account the period of time. The supply of a commodity cannot be curtailed in the short period, but in the long run, the supply can be adjusted to the demand.

Incidence depends on the elasticity of demand and supply.

[1] Dalton. *Public Finance,* p. 54.

The supply of a commodity is, therefore, inelastic in the short period, though it may be highly elastic in the long period. Hence though the incidence of a tax may be on the seller during the short period, in the long run it may fall on the consumer. The ultimate dependence of the problem of incidence on elasticities of demand and supply may be illustrated by an example. The demand for a commodity having a good number of substitutes is highly elastic. Thus if tea is taxed while coffee, cocoa and other similar drinks escape taxation, the seller will not be able to raise the price of tea very much ; because in that case he will lose customers. The incidence of the tax will be upon the seller.

Incidence of a tax on commodities in general : The analysis of the principles governing the incidence of taxation in general also explains the principles which determine the incidence of taxation on commodities. Some other factors regarding incidence remain to be analysed. That analysis is taken up now.

It has already been observed that the importer or home manufacturer who has to pay the import duty or excise duty in a lump sum will try to cover that by charging higher prices. In addition to that he will charge an interest for the tax which he has advanced. So that price may go up by more than the amount of the tax. But how far he will succeed in this attempt depends upon the elasticity of demand for, and the elasticity of supply of the commodity in question.

Where a commodity is produced under conditions of constant cost, the price will go up by the full amount of the tax. No doubt its demand will fall with a rise in price, but as all units are produced at the same cost, whatever the scale of operations, the price will be increased by not more than amount of the tax.

Incidence under D. R.

Where a commodity is produced under conditions of diminishing returns, the levy of a tax will raise its price, *but not by the amount of the tax.* Suppose 10,000 units are produced at a cost of 5 rupees each. If the amount of the tax is one rupee per unit, the price of each unit will at first be Rs. 6. But after the imposition of the tax 10,000 units will

not be sold, because at the higher price demand will fall off. Suppose the number sold falls to 9,000 units. As the output is diminished, cost per unit will fall to (say) Rs. 4/8. With the addition of the tax price becomes Rs. 5/8; *i.e.*, price rises by an amount less than the tax.

When the commodity is produced under conditions of increasing returns, the price may rise *by more than the amount of the tax.* Suppose 10,000 units are produced at a cost of 5 rupees each; and 9,000 units are produced at a cost of 5/8 rupees each. After the imposition of the tax, if the demand falls from 10,000 units to 9,000 units, the cost of production excluding taxes will increase to Rs. 5/8 and with the addition of the tax, the price becomes 6/8 rupees. Hence it has been advocated that taxes should be imposed on commodities produced under conditions of diminishing returns and bounties should be given to commodities produced under conditions of increasing returns.

Incidence under I. R.

There is another possibility. After the imposition of the tax, the competing sellers may combine and may agree to raise the price by more than the amount of the tax. Again, if import duties are imposed on all commodities except gold, other imports may diminish, the import of gold may increase. Increase of gold import will raise prices all round and the price of the taxed commodities may rise by more than the amount of the tax.

Incidence of a tax on land and buildings : The problem of incidence is very complicated. It is better to make a separate study of different aspects of the question. A *tax on economic rent* falls upon the rent-receiver, or the landlord. Rent is a surplus above cost of production including normal profit. The tax is paid out of the surplus and cannot be shifted to the occupier, because he earns no surplus except normal profit. But here the assumption is that the landlord is already charging full economic rent, and that the tax is levied on all rent. But if the tax is levied only on the land producing (say) jute, then in order to avoid the tax, the jute lands will be used to produce other crops. The result will be a fall in the production of jute, and its price will rise sufficiently so as to make its production as remunerative

as the production of other crops. The incidence will then be upon the consumers of jute.

The incidence of a tax proportional to the quantity of produce depends on the elasticity of demand for the produce. The tax adds to the cost of production of the crops and their price will rise. If the demand is inelastic, the price will rise by the full amount of the tax, because the customers will demand the same amount as before, even at higher prices. The rent would be unaffected, and the incidence is on the consumers of the crop. If the demand is elastic, the higher price will lead to a fall in demand. Production will be curtailed, and marginal lands will go out of cultivation. Rent would thus fall, and the incidence will be upon the land-owner.

Incidence of a tax on building.

The incidence of taxes on buildings is more complicated. A part of the tax may be borne not only by the owner, but also by the occupier and even the builder of the house. A part of the tax may be shifted on to the consumers of the articles traded in such a building. When a business in a locality is patronised by local inhabitants, a part of the tax on the building may be shifted to the consumers through a little enhancing of prices. The difference in prices may be so little that the consumers may not be willing to take the trouble of going to a distant shop for obtaining those commodities.

As regards the apportionment of taxes between the occupier and the owner, if the demand for the houses be inelastic (which is generally so) the burden is likely to be borne in a large degree by the occupier. If the demand for houses is not very great in a locality, but the supply is fixed for the time being, the burden of the tax is borne in a greater proportion by the owners. But the owners in such cases will not build any more new houses, and as the demand for houses rises subsequently with the increase in population, the owners will be in a position to shift the tax to the occupiers. Hence in the long run taxes on houses are borne by the occupiers and not by the owners.

Incidence of a tax on monopoly : We have already seen that a monopolist aims at securing the maximum net

profit; and that he will produce and sell that amount of output which will equate the marginal revenue with his marginal cost. If the tax is imposed as a lump sum on the profits of the monopolist, this will not induce him to alter the price in any way. The price which brought the maximum revenue to him before the payment of the tax will still yield the largest revenue even after the payment of the tax. If the tax imposed is a proportional one, levied (say) at the rate of 10 per cent on monopoly profits, this will leave the price unaltered. His net revenue, after the payment of the tax, will be 90 per cent of the highest revenue. Hence the burden of a proportional income tax will be borne entirely by the monopolist. Next, let us suppose that the income tax is levied at a progressive rate on the profits of the monopolist. In this case also the burden of the tax will be borne by the monopolist. Monopoly equilibrium will be established at the point where the marginal revenue brought by the last unit of output sold will be equal to the marginal cost of this unit. As the monopolist gains no return on this unit, he pays no tax on it. Thus he will go on producing the same output as before, and the price will also remain the same. When the tax is levied on the output, the highest monopoly revenue is obtained when the price is raised a little. With the addition of the tax, the marginal costs will rise, and if equilibrium is to be maintained, the marginal revenue and the price will also rise. By how much the price will have to rise to bring marginal revenue into equality with marginal cost, will depend on the elasticity of demand. As the price is raised some portion of the tax is thus paid by the consumer. In such a case, the incidence is partly on the monopolist, and partly on the consumer, unless, of course, the supply is absolutely inelastic or the demand is highly elastic.

Incidence of import and export duties : Custom duties are obstacles to the mutual exchange of goods between any two nations. The money burden of such an obstacle is divided between the two countries in proportion to the elasticities of their respective demands for each other's goods. The burden varies in direct proportion to the urgencies of demand. If the demand of England for Indian goods is more

urgent (*i.e.*, more inelastic) than the latter's demand for English goods, the burden of duties is more likely to be borne in a greater proportion by the consumers in England.

The burden of duties on imports will vary according to the elasticities of demand and supply in the home and foreign countries. In the duty-levying country, the price will rise less and will therefore fall more abroad, the greater and more elastic is the home supply. If a slight rise in the price of the taxed product leads to a much enlarged production in the home country, then the price will rise only by a small amount in the home country, and fall by a large amount in the foreign country. Similarly, if the foreign supply is less elastic and smaller in amount than the home supply, then the price will rise less in the duty-levying country. If the foreign producer is not in a position to decrease his supply either because his investments are specialised to produce the particular goods demanded by the home country, or because he cannot find alternative markets, he will be forced to sell at a lower price than if he could readily change his supply. Thirdly, if the demand of the home country for the taxed goods is very elastic, the price will rise by a small amount in that country. Conversely, if the foreign demand is highly elastic, the price will rise by a greater amount in the importing country.

When the incidence is on the foreigner.

Prima facie the burden of import duties will be borne by the home consumers, because as the importers are earning only normal profits the imposition of the duty reduces their profits. They will certainly shift to other occupations where there is a greater chance of earning normal profit. The result will be a fall in the supply of such goods. Their prices will rise until the importers can earn normal profit. Usually therefore the incidence of the custom duties is on the home customer. But there might arise occasions when the foreigners might be made to pay the tax. We have already seen that the price of the taxed goods will rise less in the duty-levying country when the home supply is highly elastic and the foreign supply is inelastic ; or when the home demand is highly elastic and the foreign demand is inelastic. In all these cases, the foreign producer will have to bear the burden

of the tax partly or wholly. Similarly, if the amount of the imported goods is very large in relation to the production of the foreign country, and very small in relation to the production of the importing country, the rise in price will be small, and part of the burden of the duty will be borne by a foreigner.

Similarly, in a country which produces raw materials, demand for which is usually inelastic, while it imports only manufactured goods for which the demand is elastic, a part of the export or import duties may be borne by the foreigners. But if the foreign producers have other markets in which they can sell their products, or if they have other competitive sources of supply of raw materials, such duties will not be borne by them. Thus we see that only in rare cases the incidence of such duties is on the foreigners.

Incidence of income tax : As regards the incidence of income tax two opposed sets of views are held. One class, *viz.*, the businessmen, hold that income tax can be and is shifted in the form of an addition to price. "When a trader endeavours to ascertain his costs with a view to fix prices, he often takes into account, at least indirectly, the amount of income tax he will have to pay, and if the market conditions permit, fixes his prices at such a level as would yield to him the minimum net income that he desires to obtain or actually needs."[2] The opposite view is held by economists. They argue that income tax cannot be shifted, (subject to some exceptions) and cannot enter into prices.

Let us consider the question whether the trader can shift the burden of the income tax on his profits to the consumers in the shape of higher prices.

In the case of the monopolist we know that he has already fixed a price with a view to obtaining the highest monopoly revenue. As that is the best price which he can fix, he cannot get better profit by fixing any other price. Hence he will not gain anything by changing his price.

The competitive trader will find it more difficult to charge higher prices and thus to shift the income tax. He has not the same power as the monopolist to raise his price. It

[2] Evidence of the Association of British Chambers of Commerce before Colwyn Committee. Quoted in the Report, p. 109.

is limited by the existence of competition in three important ways. *First,* his goods are liable to be compared with similar goods with slight differences in quality. *Secondly,* he cannot control the supply of other rivals. They will supply the market if he limits his supply. *Thirdly,* he cannot prevent his competitors from attempting to reduce their costs and undercut him. In a competitive market, price at any time becomes equal to the cost of production of the marginal producer. Since producers at the margin earn no surplus, or get so little profit as not to warrant the imposition of the income tax, no element of income tax can enter into prices.

In joint-stock companies, the tax is charged at a flat rate on the profits of the company. The directors of a public company are not under any inducement on personal grounds to shift the tax as are the owners of a private business. Further, though the profits are charged at a flat rate at the source, the shareholders whose total incomes are very great are liable to pay a surtax and others whose incomes are small are liable to get a rebate. Hence the company as a whole consisting of different kinds of shareholders is under no inducement to raise prices. As regards the private firms, the rates vary from firm to firm ; hence if the firms have to add income tax to prices, the prices of commodities will differ from firm to firm. But there are some firms which will be in a position to underbid their rivals. The bigger firms cannot allow such a contingency to happen by charging higher prices.

Then foreign competition is to be taken into account. If the home producers charge higher prices, the foreigners will undersell them and capture the whole market. Of course, the foreign producers may have to pay income taxes in their own countries. But the rates of assessment in different countries are so different that it is idle to expect that the foreign producers and the home producers will advance their prices to the same level.

Lastly, the income tax is a general tax. If it enters into price, the general price-level will rise ; but a general rise in price-level cannot be sustained for long unless it is backed by an inflation of credit and currency. This follows from the quantity theory of money. Other things remaining the same,

the general price-level cannot rise unless there is an inflation of currency and credit. But there is no reason to believe that increased income tax will lead to an increase in the amount either of legal tender or bank deposits.

Professor Seligman points out that in a period of rapidly rising prices, the inducement of the marginal producers to cut prices is removed and under those circumstances, the imposition of a tax of any kind will afford the producer an excuse for asking a still higher price. But this is a short period phenomenon. Another case where the income tax may be added to some extent to prices is when the retailer sells in an imperfect market in a locality. He may raise the price a little, and the purchaser may not think it worth while to take the trouble of going to another shop for making daily purchases. But the extent of the rise in price must be very small. Otherwise he will tempt competitors.

The imposition of this tax will affect both the marginal revenue and the marginal cost curves. It will affect the amount of savings. If, with higher taxation, a given gross income yields less net income, the energy and time given by entrepreneurs may be reduced. As a result, prices will be affected.[3]

Amortisation of taxes.

Capitalisation of taxes : When a tax is levied on the income from any form of durable property, it reduces the net income of the property. As a result, the value of the property may be reduced. This phenomenon is called the 'capitalisation', or 'amortisation' of taxes. The amount of the tax is capitalised at the current rate of interest, and the selling value of the property is diminished by the amount of the tax. To take an example, suppose a particular piece of land yields Rs. 100 as rent, and the rate of interest is 5 per cent. The value of the land then will be Rs. 2,000. Suppose that the government imposes a tax of 10 per cent on the rent of the land. The net rent, after paying taxes, is Rs. 90. The value of the land will now become Rs. 1,800. Future buyers will know that they will have to pay a tax at the rate of 10 per cent

[3] Harris, *The National Debt and the New Economics*, pp. 215-16.

on the rent. They will therefore offer a smaller sum for the land so as to get at least 5 per cent on their investment. The future buyers will of course be paying the tax every year, but it will not represent any real burden to them as they have paid a smaller sum for the land. He who was the owner of the land would have to amortise, or write off the value of the tax. The entire capitalised value of the tax will thus be paid by the sellers of the property. Of course it is true that if the tax is remitted after a number of years, it will give a bonus to the present owners of the taxed property, since the value of their property will increase.

Several conditions must be fulfilled before a tax will be capitalised. The tax must be levied on a durable form of property whose supply cannot be adjusted at will to the changing prices of the property. If the property is not durable, its supply will be reduced as a result of a fall in its value. The price will therefore rise, and the burden of the tax will fall on the buyers. The second condition is that tax must be a differential tax in the sense that there are other sources of investment which are not taxed, or which pay taxes at a much lower rate. It is the exclusive non-general character of the tax which makes capitalisation possible. Suppose that only the land is taxed, and that there is no tax on (say) government securities. The investors may invest their money either in land or in government securities, and they would get 5 per cent on their money when invested in securities. They will not invest in land unless they can get at least 5 per cent. Hence when a tax of 10 per cent is imposed on land buyers would pay only Rs. 1,800 for a land which gave a gross rent of Rs. 100 and a rent of Rs. 90 after paying taxes. But if all the available alternative sources of investment are also taxed equally, the buyers of the property will have no option to go elsewhere and get better terms. The tax will not be capitalised under such circumstances. Another feature favouring capitalisation is the *unexpectedness* of the tax. If the tax had been foreseen, it would have been discounted from the very beginning. But if a differential tax is suddenly levied on a durable property, the sellers will have no option but to accept a reduction in the value of their property at the time of the sale.

Thus the tax on any kind of durable property may be capitalised, if it is not universal. A general income tax does not satisfy this requirement, as the tax is general and not exclusive. But that part of the income tax which falls specifically on property incomes may be capitalised provided of course that part of the tax can be separated from the general income tax. A differential tax on the rent of land, as we have already seen, will be capitalised. In the same way, a tax which falls on the excess profits would be amortised, and the selling value of such businesses will decrease. Suppose that a company was earning profits at the rate of 50 per cent while the normal profit was 10 per cent. The value of the shares of the first company will be five times that of a company which earned only normal profits. Suppose now a tax is levied, and the excess profits are reduced to 30 per cent. The shares of the former would now be only 3 times higher than those of the latter. Similarly, a tax on monopoly profits would reduce the amount of the profits; the selling value of the monopoly property would thus decrease by the capitalised value of the tax.

Diffusion, or Absorption theory of taxes.

"An old tax" : It has often been argued by many financiers that an old tax is no tax, and that its burden is scarcely felt by anybody in particular. For example, it was often stated that the Indian salt duty was an old tax, and as such it was not necessary to repeal it. We must therefore examine the question in more details. There are several arguments which go to support this statement. One we have already noted. An old tax may be capitalised, and though the people are paying the tax year by year, they do not share its burden. But not all old taxes are capitalised. Only if it is a tax on a durable property, and it is a differential tax, it will be capitalised. A second argument is that advanced by the advocates of the diffusion theory. According to the theory, every tax is diffused throughout the community in such a way that it is not possible to determine the exact incidence of the tax. The ultimate burden is, by diffusion, spread over the whole community. An important writer of this school has compared the levying of taxes with the operation of blood-transfusion. After blood is taken from a

particular vein, it alone does not become bloodless. The only result is that all the veins now contain a smaller amount of blood. Similarly with taxes. When a tax is imposed on any particular point the burden is not borne exclusively by that point, but is diffused through all the points. Hence an old tax will get diffused in course of time, and no particular individual will feel specially burdened because of the tax to the exclusion of others.

The diffusion theory of the incidence of taxes is an useless one. Of course there is no doubt that the effects of a particular tax are widely diffused throughout the community as time passes on. But that does not mean that we cannot determine the exact incidence of a tax. An old tax is certainly not a *burdenless* tax. When the Indian salt tax was repealed, the price of salt fell immediately, and to that extent, therefore the consumers gained. Thus an old tax cannot be said to be a "no tax". Of course, it is true that an old tax is one to which people have become accustomed in course of time. Hence once they get accustomed to the payment of the tax, it is regarded as inevitable, and people do not always keenly feel the burden of such tax, as they would do in case of a new tax. In the same sense, it can be said that an old sore is no sore. But certainly it is no great merit of the tax that it is not much felt by the tax-payers. There is also another argument in favour of an old tax. The shifting of all taxes takes time, and much initial disturbance and hardship are caused when tax is first levied, and before it finally settles down. An old tax has already been shifted and less settled down. But all these arguments lend no support to the statement that an old tax is no tax.

Criticism.

CHAPTER LII

PARTICULAR TAXES

Effects of a tax : The problem of determining the effects of a tax is concerned with the ultimate economic conditions to which a tax gives rise. There is a distinction between the incidence and the effect of a tax. The question of incidence relates to the shouldering of direct money burden, while the question of effects relates to the influence of the tax on the technique of production and distribution of incomes and on the willingness and ability to save. The effect of a tax may be studied under three heads ; *viz.*, effects on the people's desire to work and save ; effects on the people's capacity to work ; and effects on the distribution of economic resources.

Income tax : its effect : The effect of income tax on people's ability to work depends upon the height of the income tax and on the classes of income on which it is levied. The general practice is to exempt incomes below a particular level from the operation, of the tax, and then with the increase in the income, the graduation is steepened. After a certain level is reached, the income is further subjected to a super-tax. But the rate of tax is never pitched so high as to confiscate the whole of the income. So far as this exemption limit is determined with reference to the standard of living of the working classes and the lower middle classes the operation of this tax cannot be said to encroach upon the necessaries of efficiency. Again on moderate incomes, the levy is very light. Hence *incime tax does not effect the standard of living and therefore does not reduce the capacity to work.* Now as to the question of its effects on the capacity to save, every tax reduces the people's capacity to save, so also does income tax. But the total capacity of the nation to save may be quite different from the individual capacity. If the proceeds of the income tax are utilised in paying interest on loans taken by the

Income-tax and the capacity to work and save.

government; then there is a direct transfer of money from one class of savers to another. This is likely to be saved by bondholders who are expected to possess the same propensity to consume as the rich tax-payers. Hence the question whether income tax reduces a nation's capacity to save depends upon the question, how is the revenue spent? Further, much of the capital of the country is automatically saved by joint-stock companies. This part of capital has little connection with the question of people's ability to work and save.

Income-tax and willingness to work and save.

Let us next discuss the more complicated psychological question. How does the income tax affect people's willingness to work and save? Two extreme views are held. One class of writers suggest that a high rate of income tax reduces a person's incentive to work and save, as a considerable part of his income is taken away by tax. The other class hold that this tax strengthens the incentive to save, since it makes a greater accumulation necessary to provide any given net income or capital sum for the future of the tax-payer and his family. The later argument is strengthened by the consideration that many well-to-do persons desire wealth for the sake of distinction and as evidences of worldly success. The imposition of income tax will rouse these men to greater activity than before. The question whether people will work more or less depends upon the elasticity of demand of a person for his income. If the demand is elastic, the willingness to work and save will decrease, but if the demand is inelastic the willingness to work and save will, on the other hand, increase. People are generally assustomed to a certain standard of living. Hence their demand for a particular sum must be inelastic. So also if the demand for a particular amount of money in the old age or for one's children be inelastic, saving will not be reduced. Of course, it is a fact that there are certain savers who are on the margin of doubt whether to save or not. The effect of the tax on such a class is bound to be harmful. Now, income tax will not diminish the will to save of joint-stock companies, which are responsible for saving large sums of capital every year. They are not

influenced by the same considerations as private individuals. The profits of the company are assessed at a flat rate at the source. The rich shareholders are further assessed at a higher rate on their total incomes. The poorer shareholders, whose incomes are below the exemption level, are granted rebate. The business as a whole does not stand either to gain or to lose. Hence the imposition of the tax will not adversely affect the savings of such businesses.

An observation perhaps would not be out of place here on the question of the effect of the tax on the psychology of the saver. When the people become assustomed to a particular rate of income tax the poignancy of hardship is gradually blunted. The rates might seem to be oppressive to the first generation, but subsequent generations do not feel the effect to the same extent. Income tax when first imposed in England gave rise to discontent throughout the country though the rate was not very high ; yet now it is not felt so burdensome, though the rate is higher.

Now, we shall consider the effects of income tax on the distribution of economic resourses between different employments and localities. This topic can be conveniently discussed under three heads, *viz.*, (1) Income tax, and spending and saving ; (2) Income tax and enterprise ; (3) Income tax and flight of capital.

Does it differentiate between spending and saving?

Income tax and saving. It is argued that income tax is a 'differential' tax ; it differentiates against saving and gives incentive to spending. As the tax is imposed on every kind of saving, people are induced to spend in preference to saving. As this is undesirable from the standpoint of capital accumulation. Pigou and Fisher advocated that income saved should be totally exempted from income tax. This tax should be levied only on that portion of the income tax which is spent. The argument that income tax levies a double tax on savings has been contested by a number of writers including Stamp and Guillebaud. When an income is earned, it will be taxed at a particular rate. If the whole of it is spent, there will be no more tax payments. But if a portion is saved and invested, the yield from such savings will also be taxed. This is not double taxation of savings.

To levy a tax on the interest on savings does not lead to double taxation of such savings. For interest represents new wealth produced at subsequent periods of time by means of the savings. Hence the same income is never taxed twice, whether it is saved or spent.

Income tax and enterprise. It is suggested that income tax reduces the inventive to undertake risky enterprises. The motive in undertaking risky businesses is high profit. If profits are reduced by taxation, no one would undertake such businesses. Here also the psychological factor is important. No definite judgment can be passed. It is no doubt true that some persons will prefer secure investments to risky ones. There are, on the other hand, others who will go in for more hazardous business for making good the loss made by tax payments.

Dr. Black has argued that the levy of the tax will decrease the expenditure of the rich on luxuries, while the proceeds of the tax will be spent for the benefit of the poor. The manufacture of luxuries requires more uncertainty-bearing than that of commodities required by the poor. Hence the total uncertainty-bearing to be borne by business-men will also decline as a result of the levy of the tax.[1]

Income tax and flight of capital. There is the possibility that if the income tax is assessed at a very high rate, capital will flow to foreign countries. But incomes received from foreign countries are also liable to taxation. The owner can escape taxation only if he is willing to go abroad along with his capital. The possibility of flight of capital is further reduced by the fact that income tax may also be levied in foreign countries. The same income may be taxed abroad and at home—a case of double taxation. It will discourage foreign investment instead of encouraging it.

Now, there is the possibility that no foreign capital will be invested in the country imposing income tax. But this investment depends on a number of factors; the rates of income tax at home and abroad, the profitableness of investment, security in the foreign country, etc. All these factors

[1] D. Black. *The Incidence of Income Tax*, p. 225.

determine such investment. No categorical judgment either way can be passed.

Death duty : Another important method of direct taxation is the taxation of property passing at death. The examples of this method of taxation are the English Death duties and the American Inheritance Taxes. In England the Estate Duty varies with the value of the estate left; and the Legacy and Succession Duties vary with the degree of relationship. Nearer relations pay a lower rate of the duty than other distant relatives. In America, inheritance tax varies with the value of the estate left. Leaving aside the question of incidence, let us note the effects of this tax on production as a whole.

Death duty and savings.

As the death duty is liable to be assessed at a high rate only on big inheritances, its effect on the savings of the lower classes of people is not serious. Of course, the legatee who is liable to pay the duty will be unable to save so much capital as is spent for the payment of tax. But every high tax is of that type, this is nothing peculiar to death duty. Many persons are of opinion that income tax is better than death duty in one respect, *viz.*, income tax is paid out of income while death duty is paid out of capital. This argument is clearly wrong. A high tax, whether it is income tax or death duty, is likely to encroach on capital. Income tax is paid out of potential capital; while estate duty is paid out of present capital. Further, when death duties are provided for by annual insurance there is no difference between a death duty and an income tax.

Death duty and willingness to save.

As regards the effect of death duty on the willingness to save, it is less deterrent than income tax. Death duties are to be paid in the future and not in the near future as in the case of income tax. We visualise the distant future less clearly than the present or the near future. Further, the payment will be made not by the person saving, but by the legatee. Death duty allows the person to enjoy his wealth during his life time and does not effect the prestige of leaving a large property at death. From all these considerations, it may be

concluded that death duty will affect the willingness to save in a less degree than income tax.

The effect of the death duty on the psychology of the legatee will be perhaps to induce him to work harder. If the exactions are heavy, he may try to make good the encroachment on the estate by the duty. If the legatee, however, is a distant relative, the prospect of a big lagacy is not likely to reduce his will to save and work very much. That legacy is in the nature of a windfall to him, and so long as the estate does not actually reach him, he can scarcely take such a legacy to be a certainty, and reduce his work on that score.

Rignano scheme : In the preceding argument it is assumed that death duty checks to some extent the desire to save. In order to mitigate this evil effect of the duty on the psychology of the saver, Professor Rignano, an Italian writer, has suggested a scheme of death duty. The scheme is briefly as follows. The tax on an inherited property should be graduated according to the number of times it has already changed hands by inheritance. If A left property which he had himself earned to B, B would take (say) two-thirds of the property and the state one-third. When B leaves this property to C with some additional self-earned property, C would get one-third of the property inherited from A and the remaining portion of A's property would be taken by the state. But of the personal property of B, two-thirds will go to C and one-third to the state. On the death of C the whole of the property left by A will be confiscated by the state. Thus the whole property goes to the state after it has passed through the hands of (say) two heirs. The assumption underlying the scheme is that a person cares more for his descendants of the first degree than for his remote descendants. The prospect of confiscation of the property after a few generations will not so seriously affect the desire to save, as the prospect of confiscation in the next generation. On the other hand, since B knows that a great part of A's property will be taken away by the state, he will probably work harder and save more in order that his heir C's standard of living may not fall. Thus instead of having

bad psychological reactions, it may actually increase the desire to work and save.

The scheme is bound to present many administrative difficulties, but we have the weighty opinion of the Board of Inland Revenue in England that "it would not be impracticable to introduce in the country an effective scheme of death duty taxation on the lines of the Rignano proposal." On grounds of equity, an objection is raised. Let us suppose that B inherits from A Rs. 50,000 invested in shares of companies, and that during B's life-time, those companies fail, and the value of the inherited property becomes nil. But afterwards by his efforts B amasses a considerable fortune. Will then B's property be regarded as inherited and taxed at the higher rate, or will it be regarded as B's self-earned property and taxed at the lower rate? If the second course is adopted, every inheritor will pretend that his inherited property has depreciated in value. Much fraud and evasion will be practised.

Some objections against the Rignano scheme.

Dalton points out that the person, after whose death the property will be wholly confiscated, may totally dissipate the property during his life-time. For that reason he suggests a modification of the plan. An additional charge equal to the amount payable at the next passing should be made on the net amount of the wealth after the ordinary duties have been paid. In exchange for this additional charge, the beneficiary would receive from the state a terminable annuity, and the annuity to be paid by the state would be terminable with the beneficiary's life. "Theoretically the heir would be no worse off in regard to income, but on his death the state would be assured of the capital sum."

Taxation of unearned increment : It has been proposed to tax the unearned increment in land values. The value of a particular plot of land may increase owing to improvements made by the owner. It may also increase because of the progress of the society without any effort on the part of the owner. As wealth and population increase, prices of crops go up. This causes a rise in the rent and the value of the land. This is specially prominent in the case of urban sites. Urban sites in the heart of the city, sites through

which new roads have been constructed, and parks opened out,—all increase in value and often to abnormal heights. The growth of towns causes large increases in the value of land in and near about them. These increases in the value of land are just like windfalls; as they are due to the activities of the society, it is not inequitable that state should take away such increments from the present owners who have done nothing to contribute to the rise in the prices of land.

The unearned increment is regarded as an ideal tax from several points of view. One has already been mentioned. The owner of the land has done nothing to claim the increment which has been wholly due to social action. There is nothing unfair in imposing a tax on an increase of wealth not due to good management, or to foresight, but only to a stroke of good fortune. A second reason is the unexpected character of the increment in land values. Hence the tax will offer no inducement to change the supply of land, or the willingness to work on the part of the owners. It will, therefore, cause practically no diversion of the economic activities of the people.

Its effect on the will to save.

The question, however, is more complicated than it appears at first sight. It is quite possible that the future rise in land values has been foreseen, and has, therefore, been allowed for in the present buying price of land. The buyer "may have foreseen the possible development into a building site, and may therefore have paid a price above the value of the land in its existing uses because of the chance of its development. Part of the increase in price that he gets then is not a windfall, but accumulated compound interest on his old investment".[2] If such be the case,—and one cannot be sure that this is not the case,—then the search for the 'unearned' portions of economic rent is almost an impossible task. Another serious difficulty is that it is not always possible to distinguish clearly between the unearned increment, and the additional value created by the improvements made by the owner. Land is not a self-directing factor. The owner must

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[2] Robinson. *Public Finance*, p. 66.

perform some work; he must plan for its use, and make improvements on it. So what he receives from land is partly rent, and partly a composite income consisting of wages, interest and profits. To separate the earned from the unearned increment would tax the skill of the best brains. The Finance Minister, in his zeal to gather the whole of the unearned portions, would inevitably cross the shadowy line between earned and unearned increment, and would not only cause much injustice to the individuals, but would also diminish the productive effort of the people. It has also been argued that the payment of the unearned increment is often necessary to secure the rapid development and the best utilisation of the land resources of a country. The lure of the unearned increment has guided the footsteps of many a pioneer. It has encouraged foresight, and has acted as a force directing the possession of land into the hands of those best able to use it effectively. If a tax carries away all these increments, there might be a difficiency of incentives to the best development of land.

A more serious objection is that land is but one form of investment to a person. There are 'unearned' portions in every form of income. There is an element of surplus in the high salaries of the Cinema stars or in the interest payments, etc. Why not tax them equally as in the case of land? To put a special tax on land is to discriminate between different kinds of investment. And this is unjust to the present owners who will have to bear the whole capitalised value of the tax. The tax is inequitable for another reason. If the state takes away the whole unearned increment, is it not just that it should compensate the owners whose lands decrease in value? Is it equitable that the state should adopt, with regard to the existing owners of land, the policy of "heads I win, tails you lose?"

All these difficulties point to the impossibility and inadvisability of taxing the whole of the unearned increment of land values. But there can be no objection if the state takes away in taxes only a part of the unearned increment, and possibly the major portion of any future increment in land values. There is, as Taussig points out, no vested interest in the future. And until the "ideal" tax, free from

all blemishes and difficulties, is revealed to us, the tax on the unearned increment may be accepted as the next best.

Taxation of undistributed profits : It is the usual practice with joint-stock companies to retain a certain percentage of their gross profits and to carry it forward in their reserves. These profits are not distributed among the shareholders in the form of dividends. Attempts have been made in a number of countries to levy a tax on such undistributed profits.

Taxes on undistributed profits have been levied for a variety of purposes. Apart from the desire to raise a certain amount of revenue, these taxes have other objectives. In the first place, such taxes are levied to prevent an unwise accumulation of profits in the reserves and to promote a better use of capital funds by the companies. Secondly, they may be levied to force the companies to declare larger dividends and so to strengthen the purchasing power of the consumers during a period of depression. Thirdly, they may be levied to remove the possibility of a wealthy shareholder of a company avoiding the payment of personal income taxes by allowing profits earned to be accumulated in the reserves. If a substantial part of the undistributed profits is distributed among the shareholders through the payment of higher dividends, the rich shareholder would have to pay large amounts in income taxes. But if the profits are ploughed back into the reserves, the shareholder would not have to pay income tax at higher rates, while he will benefit from the higher prices which such shares would command in the market. The shares of companies with large reserves would rise in the share markets. Lastly, taxation of undistributed profits is also undertaken for the purpose of regulating the investments of joint-stock companies in various ways.

One way to avoid the payment of the tax will be for the companies to declare higher dividends to the shareholders. If this is done, the aggregate amount of corporate savings would decline. The effect on the total savings of the country would depend on the extent to which shareholders save their extra incomes. As most of the shareholders are in the higher income groups, there is no doubt that a substantial part of the extra dividends would be saved by them.

But either when this effect is taken into consideration, this tax is likely to result in some reduction in the total volume of savings in the community.

Will the decline in corporate savings affect capital formation adversely? It has been urged that the tax on undistributed profits would restrict and curtail the supply of capital for business purposes. A part of the accumulated reserves is often utilised by the companies to finance renovations and extensions of their plants. If these reserves are depleted by tax payments, or through increased dividend payments, the companies will not then be in a position to finance these operations out of their own assets. Moreover, these reserves act as "cushions" on which the companies can lean upon during periods of depression. If these reserves decline, business concerns would be in difficulties, when for any reason, the demand for their products decreases. The tax would, therefore, exercise an adverse effect or the fortunes of business concerns.

This, however, misconceives the process of capital formation. The supply of capital for purposes of investment depends to a large extent on the expected profitability of business concerns. If a concern looks sufficiently profitable, it will be able to raise the necessary capital from the money market in spite of the decline in corporate savings. Taxation of undistributed profits does not lower the profitability of business concerns. Moreover, as this tax leads to the declaration of higher dividends, it may raise consumption to some extent, especially during periods of declining demand. By sustaining and even increasing consumption at a time of declining demand, this tax is likely to increase the profitability of business concerns, and so to exercise favourable influence on the formation of capital. As regards the "cushion" argument, it might be pointed out that the possession of large reserves does not always mean that the company would have large cash resources at its disposal. It is only the possession of such large cash resources that will enable business concerns to face the difficulties of a depression in demand.

The capital gains tax : The profits obtained by individuals from the sale of a security or any other asset have also

been subjected to taxation in a number of countries. When a person buys a lot of government securities at (say) Rs. 80 per security, and sells them at Rs. 85 per security of months later, he is making a capital gain. Normally this should not be regarded as part of his income, and is not, therefore, assessed to income tax. If a special tax is levied on these capital gains, what will be the effects of such a tax on the economy of the country?

When the capital gains tax is levied, the provisions are also made for offsetting capital losses against any gains. For example, in the U.S.A., corporations were allowed to offset capital losses against gains, and unused capital losses could be carried over for the five succeeding taxable years and written off fully against gains or income upto $1,000 a year.

It has been urged that this tax discourages the making of risky investments. People venture their capital into risky enterprises on the expectation of receiving large capital gains afterwards. In so far as this tax reduces the amount of such capital gains, it will discourage the flow of capital into risky investments. But the provisions regarding offsetting any losses against gains or incomes would neutralise any such discouraging effects. Investors know that if they undergo losses, they will be able to make substantial tax savings by offsetting such losses against any future capital gains or income. In view of these considerations it cannot be stated that this tax would discourage the flow of capital into risky investments.

The tax may, however, exercise some adverse effect on economic stability. During periods of rising prices on the stock exchanges, sellers who are making capital gains have to bear in mind the burden of these tax payments. They will, therefore, charge still higher prices for the securities. Among the buyers, a certain percentage will buy the securities probably on account of the prospective dividend payments. If the expectations about future dividend payments are bright, they may not hesitate to pay higher prices. For those buyers who buy for the purpose of deriving future capital gains, the expected tax liability is, more or less, indefinite, and will occur only when capital gains are actually

obtained. They may not, therefore, hesitate to pay the higher prices. As a result, the tax may aggravate price rises. When the share prices are moving in a downward direction, the levy of the tax may accentuate the decline in share prices. The sellers may not be unwilling to accept still lower prices as they know that they will be able to offset the resulting losses against future gains or income, and thereby save something on their tax payments.

CHAPTER LIII

PUBLIC CREDIT

Public debt : It has already been mentioned that one of the sources of public income is public debt. It is necessary to point out the differences between public credit and private credit. In the case of public debts, the state is the debtor, and this fact has important consequences. The state has sovereign power, and can, therefore, compel its subjects to lend to it. The state, moreover, cannot be compelled to pay its debts like an ordinary individual. Secondly, the state lives for ever, and may, therefore, contract a perpetual debt,—a thing which is impossible for a private individual to do. Thirdly, a state can borrow from an external source, or from an internal source by raising a loan from its subjects, or by printing paper notes and declaring them to be legal tender. The individual can only borrow from an external source. He cannot borrow from himself, or he cannot issue I.O.U.'s and declare them to be legal tender.

Difference between public and private credit.

There are other fundamental differences between the public debts and private debts. Public debts have far-reaching consequences upon production and distribution of a country. The repayment of a public debt is not made according to judgments derived from private loan operations. It is quite conceivable that the reduction of public debts may not only reduce the national income of a country, but the fiscal position of a state may also deteriorate more by the repayment of a debt than by raising further loans.

From the point of view of citizens, taxation and borrowing possess important differences. The raising of public debts gives the individual a future claim on the government for interest and repayment of the sum borrowed ; whereas taxation would not give rise to such claims. Of course, it is true that tax-payers as a whole have to find the money to pay interest and the capital by contributing larger taxes in the future. But the amount that any tax-payer would receive

on account of interest payments might exceed his tax-payments. Moreover, he can use the government securities at any time for raising funds. From the point of view of the government, there is this advantage that if the required funds are to be raised by loans, they would be paid with less ill-feeling than if they were to be paid in taxes.

An important theoretical justification can be found for public debts. Loans are usually raised by the government during those times when some extraordinary expenditure is to be made, and which cannot be met from ordinary revenues. Suppose that the government would have to pay a war indemnity, and that the sum to be paid is distributed among individual tax-payers. The share assigned to each taxpayer then becomes an extraordinary expenditure for which he must make adequate provision. The individual concerned would perhaps raise loans to cover this extraordinary expenditure. There is no doubt that a single loan raised by the state to pay the indemnity would be far superior to that of a series of private loans. In the first place, public loans could be raised at lower rates of interest than a series of private loans. Secondly, since public loans have, unlike private loans, no fixed maturity date, or a much longer maturity-date than the latter, holders of public debt possess a double advantage in that they may either hold on to a stable investment, or they may realise the loan at any time with greater facility than in the case of private loans. "In fact, because of the easy negotiability and the comparative stability in the prices of governmental securities, the floatation of public loans often renders subsidiary services in facilitation of credit operations between private individuals."[2]

Classification of public debts : There is no uniform classification of public debts. They have been classified by different writers into voluntary and forced loans, productive and unproductive loans, funded and unfunded or floating loans, annuities, lottery loans, etc. Voluntary loans and forced loans explain themselves. In England in the 17th

[1] De Vitti De Marco. *First Principles of Public Finance*, p. 294, Ch. I of Book V of this book contains a novel and admirable discussion of the utility of public loans.

century forced loans were often levied. Public debts have also been classified into productive debts and dead-weight debts. Productive debt is a debt which is fully covered by the possession of assets of equal value. A deadweight debt is that debt for which there are no assets in the hands of the public authorities. The interest on productive debts is paid out of the income of the assets, while the interest on dead-weight debts is paid out of the general revenues of the state.

Mrs. Hicks has classified public debts into three classes, *viz.*, dead-weight debt, passive debt, and active debt. *Dead-weight debts* are incurred in consequence of expenditures which do not increase the productive powers of the country. *Passive debts* are those loans which have been spent for purposes that do not yield a money income or increase the productivity of the country. But these debts have been invested in such a way as to yield utilities and enjoyments, such as public buildings, parks, etc. *Active debts* have been invested in such a way that they yield a money income, or increase the productive power of the country.

At the present moment, the most usual classification is that between funded and unfunded or floating debts. There are three different senses in which these terms have been used. According to Adam Smith, unfunded debts are those debts which have been borrowed by the government "without assigning or mortgaging any particular fund for the payment of the debt"; while funded debts are those debts against which particular funds or sources of revenue have been pledged. But modern writers do not make such distinction between these two classes of debts. Usually, the expression, *'unfunded debts'* is used to mean those loans which are repayable within a comparatively short period, (say) a year. *Funded debts* are loans repayable after a long period of time. The distinction is of course not clear, for the expressions, 'short period' and 'long period', do not refer to a particular period of time. There are people who would classify debts having a maturity of 3 to 5 years among unfunded debts. Strictly speaking, only debts repayable within a year should be classed as unfunded debts, and debts maturing after a longer period should be regarded as funded debts. Treasury

Bills (usually repayable within a maximum period of three months), Ways and Means advances from the Central Bank to the Government (being repayable within the fiscal year) are examples of unfunded or floating debts. It should be noted that in English official language, the terms are used in a special sense. Funded debts are those loans the principal of which the government is not under any obligation to repay at any time, and on which the government undertakes to pay interest only. In other words, funded debts are permanent loans, like the British "consols". Unfunded debts are debts whose principal will be repaid on some fixed date.

The government may also borrow money upon *annuities.* The government borrows in a lump sum at one time, and agrees to pay a specified sum for a number of years. A favourite method is that of a life annuity. The government undertakes to pay every year a certain sum of money on account of the repayment of the loan during the lifetime of the creditor. When the annuitant dies, the debt is taken as discharged. Another variant is the *lottery-loans.* There are many forms of lottery loan. Prizes may be awarded out of the interest, or principal. In this way, the government may exploit the gambling spirit of the people, and thus make a profit.

Public debts have also been classified into external and internal debts. *Internal debts* are loans raised from nationals of the country, while *external debts* are raised in a foreign country. In the case of the former, the payment of interest and the principal means only a redistribution of the national income ; the expenditure on this account is simply a transfer expenditure. Whereas in the case of the latter, the payment of interest, etc., means the transfer of wealth to the foreigners.

Occasions for public borrowing : The function of public credit is to serve as supplement to other sources of public revenue. Now the question is,—when should the public authorities take recourse to borrowing?

Practical expediency plays a large part in this matter. There are times when no further money can be raised by taxation without difficulty. In such cases there is no other

alternative but to borrow. Apart from such questions of expediency, there are occasions when public authorities can take recourse either to borrowing or to taxation for raising a given sum of revenue. Now the problem is to determine the principle according to which public authorities would be guided in choosing between the two alternatives.

In the first place, loans may be contracted in order to cover a deficit resulting from an unforeseen emergency. To obtain revenue through the machinery of taxation requires a certain period of time. If any emergency calls for prompt action there is no other alternative but to borrow. Loans should be contracted to meet the deficit incurred for maintaining full employment in the country. The government may have to spend large sums to increase effective demand on the onset of a depression. Loans may then be contracted.

In the second place, borrowing is permissible in financing an emergency, the cost of which is so heavy that the proceeds of taxes would not be sufficient to meet the necessary expenditure. As for instance, in conducting a war sufficient revenue could not be raised by taxation alone without damaging the economic system.

A third occasion for borrowing is for embarking on commercial enterprises by the state, which may be productive of much revenue from which interest and depreciation charges can be met. Of course, the propriety of such borrowing depends upon the quality of public management. Supposing that public management is as efficient as private management, such undertakings by public authorities are completely justified. Loans contracted by the Government of India for railways or irrigation works are productive in this sense.

Fourthly, the use of public credit is advocated for financing those projects which are of general social advantage. It is advisable to utter a word of warning regarding such expenditures. Building of hospitals, schools and highways may be sometimes urgently necessary. If the outlays on such expenditure are so large that a heavy tax would retard industry and dislocate the smooth business life of the community, then recourse may be had to borrowing. Credit spreads the burden over time and thus lightens it.

Loans vs. taxes as methods of war finance : It is suggested by many able economists that the financing of war should be carried on mainly by taxation. The main arguments that are put forward are as follows:—

Loans *vs.* Taxes.

First, it is argued that heavy taxation would check extravagant and unnecessary consumption. The rich should be made to pay taxes on a progressive scale, so that the poorer classes would not have to curtail their standard of living.

Secondly, taxation avoids the inflation of credit and prices, which loans must bring about when undertaken on a large scale. By taxation there is a transfer of purchasing power from one set of persons to another. So the chances of inflation are as small as possible. Borrowing on a small scale also does not bring about inflation. But when new purchasing power is created, whether by direct issue of inconvertible paper or by bank credit, prices are raised. A rise in prices reduces the values of all incomes. The result is that inflation is a hidden tax proportioned to income which acts not by reducing the purchasing power in the hands of individuals, but by reducing the value of their incomes. This form of taxation is inequitable because it is regressive. It falls more heavily on the poor than on the rich. To this argument, it may be replied that an all-tax policy cannot avoid inflation entirely. The taxes are paid in many cases by heavy borrowing from the banks. But the extent of inflation will be of course smaller in case of taxation.

Thirdly, this method would offset "the conscription of man-power by parallel conscription of incomes and capital." This argument is examined in the discussion of capital levy.

Fourthly, it would avoid the subsequent burden of heavy post war taxation to pay the debt charges. When the prices will fall, the real burden of debts will increase.

Loans in some cases justified.

The arguments are, of course, weighty. But there are serious difficulties in carrying out this policy. The taxing machinery, for example, cannot be suddenly thrown into high gear to meet the immediate needs of war. How do we get extra-revenues? The rates of old taxes might be raised. But an increase in the rates of taxes will not always increase the

revenue. In matters of taxation, as Adam Smith pointed out long ago, two and two do not always make four; they may make simply three. Of course, recourse may be had to new taxes. But this takes time, and the needs of war cannot wait. Some borrowing is therefore essential. But the most serious difficulty is that the expenses of a modern war reach such astronomical figures that any system of taxation which wants to raise the whole of them by taxes would be so burdensome as to crush the people. According to Seligman, to raise even half of the costs of the war, confiscation of all larger incomes and of all business' profits would not have sufficed. That loans lead to inflation, and that inflation is a serious evil is not doubted. But inflation has this merit that it makes men work. Heavy taxes would hamper industry, and would dry up the sources of capital just at the time when all the resources of the country should be utilised to the utmost to carry the heavy burden of war.

On the whole, it is safe to conclude that some degree of combination of the two methods is the wisest means for financing war or any other serious emergency. The policy to be pursued should be a tax method assisted by a loan method rather than a loan method assisted by a tax method.

Burden of public debts : The direct money burden of an external debt is measured by the total amount of payments of interest on the capital made to foreign countries; while the real burden consists in the loss of economic welfare which these money burdens involve. The direct real burden varies according to the proportion of payment of taxes by different classes of the society. If the payments are mainly made by the rich, then real burden is less heavy than when the payment is mainly made by the poor. An external debt is in the nature of a debt incurred by an individual. The goods which are required to meet the foreign debt go out of the country. The country, just like an individual, becomes poorer to that extent. But if the goods have been provided by the rich, the real burden to the community becomes less heavy.

Is an external debt more burdensome than an internal debt?

The indirect burden of the community from the payment of the external debt and of interest consists in the check

to the productive power of the community, *first,* by the export of a larger quantity of goods; *secondly,* in the check to public expenditure perhaps in some profitable direction.

The case of internal debts is often assumed to be quite different. The payment of internal debts and of interest involves only a transfer of purchasing power from one group of persons to another. So there is no direct money burden. But the direct real burden may be considerable. Taxes are paid by all classes of persons, while loans are given usually by the comparatively richer persons. Hence when internal debts are being repaid, there is a transfer of wealth from the society as a whole to the richer classes. The real burden is, therefore, considerable in so far as this tends to increase the inequality of incomes.

Burden of an internal debt.

The indirect burden of the internal debt depends upon the effect of taxation levied for paying debts upon people's ability to work and save and upon their willingness to work and save. People's ability to save is not much affected; on the whole it increases, because the money paid for loans will be saved. The propensity to consume is less on the part of the lenders to the government than in the case of ordinary tax-payers. People's ability to work on the other hand may be much affected because taxes may encroach on the standard of living of many people. Their desire to work and save may also be considerably reduced by taxation. On the whole, the indirect burden of external debts is heavier than that of the internal debts.

Inflation and burden of debt.

There is a further point to be considered in connection with the burden of debts. Large debts are usually contracted during wars, which are generally periods of very high prices. If these loans continue to a period of falling prices, there is a double loss to society. First, so far as the nominal value of the debts is concerned, a greater amount of real wealth is paid at the time of repayment than what was actually borrowed during a period of high prices. Secondly, the interest rate during a period of high prices is generally high and that becomes a very heavy burden during a period of low prices.

Does an internal public debt impose any burden? : The vast majority of the classical economists regarded a large public debt with considerable alarm. In recent times, a number of economists have expressed the opinion that the public debt is not a burden. Dr. Lerner, for example, has stated that the size of the national debt (when held by the citizens of the country) "is a matter of almost no significance besides the importance of maintaining full employment".[2] The public debt is not a burden because the payment of interest or the repayment of loans means only a transfer of wealth from one group of citizens to another. Every debt has a corresponding credit, and there is usually someone to whom the debt is due. This has, however, been contested by Dr. Moulton, who in his "The New Philosophy Of Public Debt," has argued that if the taxes levied by the government to pay interest are not a burden, then interest payments by the corporations should not be considered a burden either. But this analogy between corporation finance and government finance is not a correct one. What the corporation pays out does not find its way back to the corporation. But what the government pays out for servicing its debt payments finds its way back to the people. Those who consider the levy of taxes to pay interest charges as a burden neglect the favourable effects of the expenditure on account of the debts on monetary supplies, income and savings. When these favourable effects are taken into consideration, the burden of public debts would be very much less than is usually assumed.

On the other hand, to say that the public debt is no burden at all is going to the other extreme. It assumes away many things. An internally held public debt may affect the economy at the time of borrowing, at the time of the spending of the proceeds by the government, at the time of servicing of the debt and of repayment. If heavy taxes are levied for paying the interest and the capital of the public debts, this is bound to affect incentives to enterprise and saving. Dr. Lerner makes too little of the taxes levied to pay interest. In fact, no straight answer can be given to the

[2] *The Economics of Control,* p. 302-3.

question regarding the burden of public debts. The answer depends on many considerations. Prof. Hansen has stated that the burden of public debts would depend to a large extent on the distribution of the debt and the incidence of the tax burden.[3]

Economic effects of public borrowing : The economic effects of public borrowing depend upon several factors. Among them these are of special significance, (*a*) the volume of loans and the source of such loans, (*b*) the purpose for which loans are contracted, (*c*) the rate of interest and (*d*) the terms and methods of repayment.

The size of the loans and its economic effects.

The size of the loan is the most significant factor. If the loan is small, the sum can be provided by the floating or idle funds of the country. In such a case there is no shrinkage of capital for investment. On the other hand, if the loan is very large, people may divert their capital from commercial investments to government loans. In so far as this happens, there will be a restriction of future capital outlays, resulting in the fall in the national income and increased unemployment. In much borrowing no new purchasing power is created. All that is done is mere transfer of resources of the community from one direction to another. But if the government takes recourse to the creation of new purchasing power it has still more disastrous consequences. Creation of additional purchasing power means inflation and a rise in the general price-level ; it leads to inequality among different economic classes which is the inevitable consequence of any sudden dislocation of price-level. Further, the currency may depreciate to a considerable extent so much so, that even by deflation the government may not be able to restore the normal value of the currency.

The second factor of importance is the purpose for which loans are created. If the loans are spent on productive expenditures, then on the whole the loans may not be unremunerative and may be justified. But if they are spent on unproductive expenditures such as wars, etc., such loans

[3] *Fiscal Policy and Business Cycles*, pp. 155-59. Also his book, *Economic Policy and Full Employment*, Ch. XXII.

are dead-weight burden on the society. By productive expenditure, the increase in the productive capacity of the country as a whole may more than compensate for the temporary losses undergone by the people. Unproductive expenditure by loans is more wasteful than such expenditure by taxes; because loans carry interest charges while taxes do not leave such a legacy.

The rate of interest is important in the sense that if the rate be high and the loan large, then a big portion of the annual resources of the country may be devoted merely for the payment of interest. This is quite uneconomical. Big loans are generally contracted during periods of high prices and high rates of interest. During the period of low prices the repayment of such debts with interest becomes very much burdensome.

The full discussion of economic effects of debts is closely interwoven with economic effects of repayment of such debts. One thing should be borne in mind in connection with repayment of debts. The debts are easy of repayment in a period of high prices. During a period of deflation, the real burden of the debt increases and the taxable capacity of the country shrinks. Hence such a period is not suited for the repayment of debts.

Methods of debt repayment : Every repayment of debt presupposes a surplus in the budget. If there is a surplus, that surplus might be employed in purchasing the bonds from the market and destroying them. But this scheme takes matters too easily. Hardly there is any government to-day, which can devote considerable part of its revenue to the repayment of debts. So we shall here discuss some other methods by which the burden of debts can be lightened.

(a) **Sinking fund** : This method of debt repayment dates back from the time of Pitt. "The original meaning of the term was that a fund was accumulated during the life of the debt with a view to redeem the principal out of it at its maturity. The fund was allowed to accumulate at a compound rate of interest. The annual interest on the loan was paid from the revenue of the state. After a few years when the accumulated sum of the sinking fund became

equal to the loan made, repayment was effected. But this magic of compound interest often did not agree with the logic of facts. While a sum was to be set apart for creating a sinking fund, the exchequer might have to incur new loans bearing higher rates of interest. Hence such a scheme was highly impracticable.

In modern times the method of redemption by a sinking fund is quite different. Certain funds are earmarked for debt redemption and they are applied annually to the reduction of some portion of the capital sum of loans. There is no longer any attempt to carry this fund to the maturity of the debt and to accumulate it at compound interest. As the capital is gradually reduced year to year, the future interest payments become less heavy and more sums can be directed towards the redemption of the loan.

The method is widely used. But the real problem is that in times of difficulty, the harassed Chancellor may, instead of taking recourse to unpopular measures of taxation, encroach upon the funds set apart for the reduction of debts. Further, a country that is heavily burdened by taxes can at best hope for a very slow reduction of its debts by this method.

(b) **Conversion of debt :** This method consists in converting a loan bearing a given rate of interest into another bearing a lower rate of interest. It has been pointed out already that debts are generally contracted during a period of high prices when the rate of interest is high. Therefore it is possible in normal times or during times when the market rate of interest is low, to contract another debt at a lower rate and to pay off the former debt. Suppose the current rate of interest on new investments has fallen considerably. The government may then make the following offer to the present holders of loans:—they may accept a new debt-bond bearing a much lower rate of interest, or they may be given the option of repayment at par. If the rate of interest offered on the new loan is slightly higher than the market rate, it is quite possible that the large majority of the existing holders would convert their loans, and very few would ask for repayment. Thus a considerable

reduction in the rate of the interest can be secured by this method. Recent conversion operations by the Government of India exemplify the wisdom of this method. The result of conversion is that the interest charges are considerably reduced—a no mean advantage when the interest charges run to millions of rupees.

But the scope of this method is very limited. The reduction of the rate of interest is possible only when the state enjoys the privilege of repayment at any time. But many debts bear no such terms. Moreover, even if it is possible to convert the loan, a considerable reduction in the rate of interest could hardly be hoped for. And such reduction, it should be noted, would also result in smaller revenues because of the fall in the incomes of the holders. Lastly, this method does not secure any reduction of the capital sum of the loans, but only the annual interest charges are lowered.

(c) **Capital levy :** Another proposal, much discussed during the years just after the first world war, is a proposal for a levy on capital of the country to pay off the huge debts contracted during the war, all at once. A certain minimum level of incomes and wealth should be exempted from the levy. Above that level, individuals should be taxed on a progressive scale. The assessment should be based upon the capital value of the wealth of the individual as distinguished from his income. Such a debt redemption scheme has been described as anticipated death duties. "For just as during the war a law was passed, by which every man of suitable age and physique was deemed to be a soldier, so now in order to dissipate one of the evil legacies of war finance, a law would be passed by which every man of suitable degree of wealth would be deemed to die and to come to life again next morning as the fortunate heir to his own property on payment of an appropriate ransom".[4] In order to secure a rapid redemption, the period of payment should be short, say two or three years.

The arguments which have been advanced for and

[4] Dalton. *Public Finance*, p. 203.

against the scheme are too numerous to be discussed here. Only some of the principal arguments are briefly noted.

This principal justification for the scheme is that the sacrifices were unequal during the war. Mainly the working classes fought during the great war and perished in thousands. Those who survived the war were maimed and crippled for their lives. The capitalists, on the other hand, taking advantage of the abnormal rise of prices amassed a huge wealth. If the working classes suffered in lives, why should not those who stayed behind, and made huge sums of money be made to suffer in wealth?

Arguments for the levy.

Another argument advanced in favour of the levy is that the payment of interest involves a permanent burden on the people. Debts contracted during a period of high prices become heavier afterwards when the price-level is lower. So the debts should be paid back all at once when the prices are still high. Of course, the payment will be extremely painful, but it is better to undergo a surgical operation once for all than to suffer from the disease for ever. The effects of such a levy are not worse than those of recurring annual taxation. Further, the adoption of a scheme of progression would reduce the inequality of sacrifice and it would be nothing but an extension of the present system of death duties and sur-taxes.

On the other hand, the opponents of this scheme hold that the richer classes did not shirk the responsibilities of the war. They also fought the great war and their losses were proportionately as great as those of other classes. Secondly, once it is taken recourse to, what guarantee is there that it would not be repeated afterwards? Thirdly, it discriminates against those who have lived economically and saved and favours those who have spent. It would discourage saving and drive capital abroad. Fourthly, what should be the basis of assessment on a professional man with large income and no capital, and on a man with small income but with much capital? Practical difficulties of this nature are numerous and often of a serious nature.

Arguments against the levy.

The repayment of inter-government debts : In recent times, the question of war debts and reparations has given rise to a new problem in public finance. The question has assumed importance not only because of the huge sums involved, but because it gave rise to a theoretical controversy over the problem of "transfer". It is unnecessary in this place to enquire into the origin of these debts. The fact is that the governments of many countries are under an obligation to pay large sums to foreign governments on various accounts. An important feature of the loans is that they are more or less unilateral payments. Now, the repayment of these debts presents two problems. *First,* a sum of money has to be raised in the country either by taxation, or by inflation. Of course payment might be made by borrowing in foreign countries. But this is only postponing the evil day when a much larger sum would have to be raised to pay off the increased volume of foreign loans. Whichever of these methods is adopted, it will only result in a substantial reduction of the real incomes of the people of the country paying the debts. Moreover, if, as a result of heavier taxation, the industries are depressed and productivity is checked, it will mean further lowering of the real incomes of the people. If the country uses the method of inflation, there is no doubt that the greatest burden is likely to fall on the shoulders of the poorer classes. This is the primary burden imposed by repayment upon the debtor countries.

Primary burden of repayment.

The second problem relates to the difficulties of transferring the sum of money thus raised by the debtors into the currencies of the creditor countries. The German Government, for example, would have first to raise the huge sum of money in order to pay the reparations. The next problem is that of transferring the German marks into the foreign currencies. Here may arise what has been called a "transfer crisis." The actual processes by which German marks would be converted and transferred finally into foreign currencies, and the burdens they would impose upon the paying country have been the subject-matter of much theoretical

Keynes-Ohlin controversy.

controversy.[5] In order to pay the reparations, Germany must increase her exports and develop an export surplus, *i.e.* an excess of exports over imports. According to Lord Keynes, the foreign buyers of the exported goods would not buy more exports unless the prices of exported goods are lowered.

Secondary burden of repayment.

By how much prices must be lowered to develop the export surplus depends on the elasticity of demand for German goods in foreign countries. In any case, the barter terms of trade move against Germany. The terms of trade would become still more unfavourable if the prices of import rise. Germany, therefore, bears a *secondary* burden in addition to the primary burden of repaying the reparations. She will have to give a large quantity of goods to buy any given quantity of imports. Not only will she have to transfer a large portion of her income to the foreigners, but she will also have to pay more in terms of goods to get each unit of the imports. The secondary burden is the "transfer loss."

Against this view it has been argued, notably by Prof. Ohlin that in order to develop an export surplus, prices in Germany need not fall, and hence there need not be any secondary burden imposed by the transfer. According to him, Keynes ignored the shifts in the *buying powers of the two countries* concerned. The payment of reparations means a transfer of purchasing power from Germany to the foreign countries. The Germans have now smaller incomes, and the countries receiving reparations have large money incomes to spend than before. This means that Germany's demand falls, while the foreign people's demand increases. This will result in larger purchases even at old prices by the foreign countries concerned. It is thus quite possible that an export surplus could be developed without any fall in the prices of German exports. The barter terms of trade need not move against Germany, and there is thus no transfer loss.

The truth probably lies in a middle view. There is no doubt that the payment of reparations will cause a change

[5] *Keynes-Ohlin* controversy in the *Economic Journal,* 1929.

in the distribution of buying power in the two countries, and this will give rise to some amount of export surplus. There will also be some shifts in prices in the two countries, the terms of trade moving against the paying country, and thus imposing a secondary burden on it. How far the terms of trade need move will depend on a variety of factors,—*viz.*, the elasticity of demand for the exports, the conditions of supply of goods in that country, the extent of the credit restriction necessary to secure a fall in prices, the height of the tariffs imposed by foreign countries, etc. If the tariffs are progressively increased, then the prices must fall progressively in the paying country and the transfer loss would be correspondingly greater. If the countries receiving payments do not allow their prices and money incomes to rise, then prices and wages must fall more sharply in the paying country, and the burden would correspondingly be higher.

Transfer problem and the creditor.

It has sometimes been urged that such payments would also inflict a loss on the creditor countries. The exports of the debtor countries and the imports of the creditors must increase, and this may not be desirable. The goods of the former would compete with those of the latter, not only in the latter's own countries, but also in the foreign markets. The result will be that the industries of the creditor countries will have to face smaller sales both at home and abroad, bringing in depression and unemployment. This need not always be the case. The goods of the debtor countries may not compete with those of the creditor countries. The debtors may, for example, send larger quantities of tea and jute and raw materials, while the creditors might have specialised in manufactures. Or, as a result of the increase in the buying power in the creditor countries, demand in these countries will increase, and this may absorb the goods of their industries. But it is quite possible that the industries in the creditor countries may have to suffer all the troubles of dislocation, depression and unemployment. These disadvantages must, therefore, be deducted from the advantages of receiving large sums of money for nothing. If, however, the payments continue for a long period, the

dislocation will be corrected, and the industries of the creditor countries will adjust themselves to the new situation. The disadvantages would thus slowly disappear, and after the initial period of adjustment is over, the payments would mean a real gain to the creditor countries.

CHAPTER LIV

FISCAL POLICY AND FULL EMPLOYMENT

In many places of our book, we have laid stress on the fact that the avoidance of the fluctuations which are the characteristics of business cycles and the maintenance of full employment should be considered to be an important objective of social policy. How far should the fiscal policy of the state be utilised to achieve this objective? It should be noted that mere monetary measures would not enable a country either to achieve or to maintain full employment. The main factors at work in causing lapses from full employment are often non-monetary, and these cannot always be controlled by monetary means. The volume of investment is not sensitive to changes in the rate of interest, the chief instrument of monetary control. The long-term rate of interest declined to a considerable extent during the years, 1932 to 1941. But this was not followed by high level investment activity.[1] Moreover, the central bank is not always free to change the rate of interest in either direction. Changes in rates of interest will affect the prices of government securities, and so may be opposed by the Treasury, the banks and other financial institutions and the public. Hence it is clear that the objective of full employment cannot be achieved by monetary policy alone.

A country will not suffer from serious unemployment as long as an adequate volume of expenditure on goods and services, whether by individuals, or businesses or government, is maintained at a high level. The total expenditure on goods and services can be divided into four categories, *viz.*, private consumption expenditure, private investment expenditure, current services of government and public investment expenditure. The existence of mass unemployment in a private enterprise economy shows that the first two categories of expenditure (*i.e.*, private consumption and

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[1] Klein, L. R., *The Keynesian Revolution*, p. 172.

investment) cannot be expected to reach a level sufficient to provide employment for all workers. Hence it becomes incumbent on the government to supplement or stimulate private, consumption expenditure or investment by the amount that will enable the country to achieve full employment. Our experience during the last war showed clearly that if the government expenditure was sufficiently large, full employment could be achieved. A pursuit of the same policies in the peace-time with sufficient safeguards should be the proper course to follow. Hence the importance of the government's fiscal policy is a programme for full employment. What is necessary is that the government expenditure on current services and public investment must compensate for any deficiency in the total expenditure on private consumption and investment. The government policy should also be directed towards stimulating or retarding both private consumption and private investment. The government, in other words, should follow what is known as the compensatory fiscal policy.

Budgeting for full employment.

Hence it has been proposed that the government should be made responsible for a level of total expenditure large enough to achieve full employment. The government should now plan a new type of budget which should be drawn up not on the basis of purely financial considerations but on the income and expenditure of the community as a whole. This budget "will take the man-power of the country as a datum and plan outlay to that datum".[2] Every year the government should make an estimate of the aggregate full employment income, and of the probable private expenditure on consumption and investment. In so far as the latter falls short of the former, the government has to take steps to ensure increased expenditure so as to prevent the occurrence of depression and unemployment. It may devise measures, first, to stimulate private consumption by instituting, for example, schemes of social security. In the modern industrial society, there are obvious reasons why people save. They save to provide for the rainy day when they may be sick, or disabled, or

[2] W. H. Beveridge, *Full Employment in a Free Society*, p. 30.

unemployed or too old to work, or for their dependants after death. If the state provides for these needs through social security plans, this will reduce the necessity for saving, and so increase the volume of consumption expenditure. Plans of social security, therefore, hold out hopes of reaching high-level consumption. But this method will show its full effects only over decades. And so as a short-period policy, this will not prove sufficient to stimulate the required level of private consumption expenditure.

Contra-cyclical tax policy.

Secondly, the government may take steps to stimulate or retard private investment in depressions and booms. In all advanced countries, the government absorbs a large part of the national income through taxation. Many economists have therefore suggested that a policy of tax reductions may go a long way to stimulate private investment when a depression is threatening. The tax rate most suitable for such a purpose is the basic or standard income tax rate. When this standard income tax rate is reduced, this would leave more money in the hands of tax-payers and so stimulate expenditure on both consumption and investment. When this rate will be raised, an immediate check will be imposed on investment activities outrunning full employment level. It is also possible to implement the income tax in other ways. Mr. Kalecki[3] has suggested an abatement of income tax, in whole or in part, for that part of income that is invested in fixed capital. That part of the profits of business corporations which are invested in fixed plant or equipment will be taxed at a lower rate, or will not be taxed at all. In addition, a five-year loss carry-forward would encourage risky enterprises. This would favour new investments. There are also other taxes which can be utilised in this contra-cyclical manner. "Thus the British government proposes to vary the weekly contributions paid by employers and employed under its system of social insurance. Countries which have a general sales tax should consider its suitability for the purpose".[4]

[3] Kalecki, *Economics of full Employment*, pp. 45-46.
[4] *Economic Stability in the Post-War World* (L. of N.), pp. 170-71.

This method of contra-cyclical tax variation has certain advantages. It is, for example, easier to lower tax rates than to increase expenditure at the first sign of depression. Secondly, this method avoids the difficulties with respect to the timing and planning of public works. It also allows more scope for consumer's choice and leaves to private investors the decision about how to invest. But it is doubtful how far this method may prove effective in stimulating expenditure and employment. Moreover, under this method, it will be practically impossible to direct private investment into a particular part of the economy. Hence it will be inadvisable to place sole reliance on this method for sustaining aggregate expenditure and employment. (Mr. Kalecki has already pointed out that tax reduction policies designed to stimulate private investment provide no solution for the problem of maintaining full employment. If full employment is to be maintained continuously, the income tax must be continuously reduced.)

Public works policy : So it will be necessary for the government to adopt a contra-cyclical public expenditure policy for the purpose of achieving and maintaining full employment. The idea that when private investment declines, the government should embark on a policy of increased investment on public works and other public enterprises is an old one. There are many socially useful projects like slum clearance, building construction etc., which can be undertaken by the state in pursuit of a public works programme. The government should accumulate a "shelf" of fully worked out projects for public works which can be put into operation at short notice on the first signs of falling private investment. It should be noted, however, that not all types of public works can be postponed or constructed regardless of business conditions. This policy is likely to be most effective in countries where the railways and other important public utilities are under state control. Such expenditure on public works will, through the multiplier processes, give rise to additional demand for consumers' goods and will stimulate private investment in accordance with the acceleration principle. Care should be taken to see that such public expenditure should not lead to any further

shrinkage of private investment by competing directly with it or by raising the rates of interest on private loans. If, moreover, public expenditure is directed to an industry in which the proportion of wages to total costs is large, the primary effect on the volume of employment will be high.

While much can certainly be expected from such a policy, a warning is necessary as to its practical difficulty. A contra-cyclical public expenditure policy will require a most careful diagnosis of the present-day conditions as well as of the future before one can settle the programme to be followed. "To make such a diagnosis presents a problem soluble for the past, with hind sight, but hardly for the present, without the gift of foresight".[5] There will moreover be practical difficulties in connection with the immediate execution of such a policy. It is quite obvious that such a programme contains deficit budgetting as an essential feature. And herein lies the real problem of a public-works policy. It has been argued that though the ideal is to incur public debts during depressions and to pay off these debts from the budgetary surpluses during booms, this may not be possible in actual practice. The consequent piling up of national debts will exercise adverse effects on the economy in many directions. The fear of increasing public debts may generate mistrust in government's policy in the minds of private investors and so may retard private investment still further. Such deficit spending will also be inflationary. But there is no reason to suppose that with proper safeguards, an increasing volume of public debts will be inflationary in its effects. Much will depend on the nature and productivity of the expenditure which gives rise to the debts, and the state of employment at the time the debts are incurred and also on the rate at which debts are increased. So long as the funds raised by the public debt are utilised to provide jobs for the unemployed, constructing homes, schools and roads, a mounting debt cannot be an evil. Everybody is then better off. "The poor are better off because they have jobs instead of hunger pains and the nervous frustration of idleness. The rich are better off because they have lost

[5] F. Machlup, *Financing American Prosperity*, p. 455.

nothing on the transfer and they get larger profits out of the full-employment income than would otherwise be the case".[6]

A contra-cyclical fiscal policy should, therefore, form an essential part of a full-employment programme. But we must be careful in pointing out that this is not all that is needed to ensure full employment. The maintenance of full employment will be the result of a successful co-ordination of many different plans concerning public spending, foreign trade, monetary circulation, wages and mobility of labour.

[6] Klein, *The Keynesian Revolution*, p. 183

CHAPTER LV

THE ECONOMIC ACTIVITIES OF THE STATE

In course of our discussion in the earlier chapters, we have pointed on a number of occasions to the important role played by the modern state in regulating and controlling economic activities. The days of laissez faire when there was a good deal of bias against all forms of state interference have long departed. In fact, it may be doubted whether there was ever any state that did not exercise quite a considerable degree of control over the economic activities of a community. Such control was, of course, reduced to the minimum during the middle of the 19th century under the impact of the prevailing individualist theory. But before the 19th century was over, there was a reaction against the theory of individualism, followed by the decline of laissez faire. This creeping trend towards state intervention in economic matters was aided considerably by the upheaval caused by the first world war. The exigencies of a world war forced the state to exercise large powers of control over the economic life in order to harness all resources to the task of winning the war. These activities of the state remained at the end of the war, made necessary by the uncertain economic conditions prevailing in the uneasy years between the two world wars. The vast unemployment which prevailed in every country after the onset of the trade depression of the thirties forced the state to step in to relieve the misery of the unemployed. It came slowly to be recognised that the achievement and maintenance of full employment ought to be the fundamental aim of state policy. This involved planning and control of the economic system in many directions. The role of the state has, therefore, become almost all-pervasive in the economic organization of the country.

The activities undertaken by the modern state in the economic organization of a country may be grouped under the following heads; the activities undertaken to regulate and control industry; activities for safe-guarding the interests

of labour ; activities in connection with regulation of foreign trade ; activities undertaken in connection with social insurance schemes ; activities undertaken to secure greater equality of incomes ; activities undertaken in connection with unemployment and the trade cycle ; and lastly, activities undertaken during and after a war.

The state and industry : The activities of the state in the industrial sphere may be considered under three groups ; the regulatory functions, control of monopolies and lastly, nationalisation or public ownership.

The state is taking an increasing role in regulating the manner of forming and operating industrial undertakings. The undertakings will probably have to take out a license from the government before they can start operations. If they are organized in the form of joint-stock companies, their constitutions and functions are governed by the provisions of the company law. The design and lay-out of their factories must conform to the provisions of the Factory Acts. If they have to import machineries or raw materials from other countries, or if they have to export their products, they must conform to the Exchange Control Regulations. Merely to list all of the regulations framed by the various governmental bodies that affect the industrial undertakings would require hundreds of pages. The main aims of those regulations are (*a*) to prohibit certain types of activities that are regarded as discreditable by the enlightened social conscience of the people, (*b*) to prevent some of the abuses of competition, and (*c*) to plan the development of the industrial resources of the country on proper lines.

Secondly, the state has often taken steps to control the abuses of monopolistic organizations. One of the most important characteristics of the modern industrial organization is the growth of monopolies: In fact, free competition is declining in almost every sphere and the economics of mass production have resulted in the growth of a few giant concerns, which might be tempted to exploit the consumers. The state has, therefore, been forced to adopt measures for fixing prices and other terms of sale of the monopolised products. In some countries, a statutory body like the Federal Trade Commission in the U.S.A. has been

established for the purpose of carrying on investigations into the monopolistic trade practices. Finally, the formation of monopolies and combinations has been declared illegal.

Lastly, the state is undertaking the management of an increasing number of industries. The question of nationalisation of industries is a most controversial topics at the present moment. Such nationalisation has been advocated on many grounds. There is, for example, the socialist contention that all the means of production should be owned by the state. Apart from this socialistic contention, other arguments have also been advanced in favour of the policy of nationalisation of industries. The predominant tendency of the present industrial organization is the formation of monopolies. The evils of monopoly are admitted by everybody. All the known methods of controlling monopolies have, however, proved ineffective to remedy those evils. Hence it has been urged that there is no alternative for the state but to take over the ownership of the monopolistic concerns. Thirdly, nationalisation of some industries has been urged mainly on strategic and other grounds. This may be true of the various defence industries, *e.g.*, manufacture of arms and ammunitions etc. In some other industries, it may be found that while it is necessary to invest large sums of money in developing or improving their organization, private enterprise is unable to provide the necessary funds. This is true partly of our coal industry. Here the state may have to step in and to take over these industries under its management and provide the capital.

Nationalisation of industries.

Nationalisation of industries may thus be supported in many cases. But one's support for such a policy would depend to a great extent on the efficiency and honesty of the administrative machinery of the state. Unless the public servants of the country are honest and efficient, the policy of nationalisation may not prove successful. Moreover, nationalisation gives rise to a number of difficult problems. What, for example, should be the proper organization for the good administration of the nationalised industries? The usual method is to set up public corporations, consisting of experts and representatives of labour and other interests appointed

by the government. But if the unit of the nationalised industry is larger than the optimum size efficiency is likely to suffer and the costs of production would then be higher than would be the case if the units were of the optimum size. Even if such public corporations prove efficient in management, there will be another difficulty caused by the fact that public officials, who have to explain and defend their policies to the legislature, may be afraid to take risks, especially large risks. Lastly, experience has shown that the operation of industries by large corporations may not result in improved labour relations.

State and labour : The modern state has also been forced to take a number of steps for protecting the interests of labour. Unrestricted competition has often restricted in the exploitation of labour. Hence the state has passed factory laws prohibiting the employment of children below a certain age in factories, and of women under certain circumstances; the fixing of reasonable hours of work and prescribing certain minimum working conditions in the factories. It has taken steps to fix minimum wages for various groups of labour in order to prevent sweating of labour and to maintain the minimum standard of living. It has granted recognition to trade unions and often forced the employers to enter into collective bargaining agreements with the representatives of labour.

The state and the social services : The state has further proceeded to guarantee freedom from want to every citizen. This is being done through the provision of what are called "the social services". It has adopted schemes of social insurance according to which all persons get free medical treatment and cash payments during periods of sickness, receive unemployment benefits if they are out of work, enjoy pensions in their old age or in cases of disablement. The widow and orphans also receive pensions from the state. The purpose behind these schemes is to relieve the poverty of the citizens, and to provide security against the various risks of life.

The state and foreign trade : The state's interest in the foreign trade of a country has a long history behind it. The

mercantilists, who flourished in the 16th and 17th centuries, wanted the state to control the flow of foreign trade for the purpose of bringing about favourable balance of trade. They wanted duties to be imposed on imports and bounties to be granted to exports. The state in those days followed such practices. Later, the views of the mercantilists were criticised by a large group of writers, of whom Adam Smith occupied the most prominent position. The freeing of foreign trade from the control of the state was more or less completed by the middle of the 19th century. But soon a reaction set in, and the protectionist sentiment gained ground in many countries like Germany, the U.S.A.[1] And Great Britain finally succumbed to this sentiment after the onset of the world trade depression of 1929. The state began constantly to interfere with the course of foreign trade for the protection of home industries and for curing deficits in the balance of payments. During the war and the post-war period the existence of continuous deficits in the balance of payments of the majority of the countries, the shortages in the supply of essential raw materials and foodstuffs, and the chronic dollar shortage have led to an all-round control of the foreign trade of a country by the state through the system of import control and exchange restrictions.

State and inequality of incomes : We have already examined in another chapter the ill effects of the present system of unequal distribution of income and wealth. It has everywhere been regarded the duty of the state to take all reasonable steps for the reduction of inequality of incomes. This has been sought to be done through (*a*) the adoption of the system of progressive taxation of incomes, (*b*) the levy of death duties or inherited properties at progressive rates, and (*c*) through the distribution of the proceeds of the taxes, mainly collected from the richer classes *via* the provision of social services among the poorer sections of the community. There are of course limits to such a redistribution of incomes. If income tax rates are fixed at very high levels, this might discourage incentive, and so dry up the sources for the formation of venture capital. Too much load may finally break

[1] For the arguments for the protectionist policy, see Ch. XLIV.

the rich camel's back. Moreover, such high rates of taxation may lead to a good deal of evasion, especially in countries where the sense of morality is not very high. In that case the whole system will be inequitable as the honest taxpayers will be paralysed and dishonesty will get a premium.

The state and the war : The exigencies of a modern war have forced the state to assume a good deal of control over the economic life of a country. A modern war cannot be fought on the basis of the principle of laissez faire. If the economic system is to be organized fully for the successful prosecution of the war, it may be necessary for the state to exercise an all-round control over the economy of the country. Thus modern states have instituted the system of price control and rationing partly to divert resources for their peace-time production to war production, and partly to curb the resulting inflationary pressure. It has to control and license the flow of new investment for the purpose of channeling it into war production. It controls the foreign trade and the foreign exchange resources with the same purpose in view.

The necessities of such control often continue for sometime after the end of the war. In the first place, such controls cannot be suddenly lifted without creating chaos in the economy. Secondly, resources have then to be diverted in a planned manner from the making of war goods into their peace-time occupations. Thirdly, many of the shortages felt during the war continue after the war, and so rationing and price control have to be retained for a considerable period of time. Lastly, the war-time accumulation of liquid assets and the backlog of consumer demand threaten to increase the inflationary pressure for some time after the war. Hence the measures of control adopted under the stress of the war had often to be continued and overintensified at the end of the war.

The state and the trade cycle[2]. The vast unemployment prevailing in different countries during the inter-war period has forced their governments to adopt various measures both for the relief of the destress of the unemployed

[2] See Chapter XLIV.

and for the prevention of cyclical fluctuations. Our knowledge about the causes of such fluctuations has also made a good deal of progress so that we are now in a position to understand the role of the government in the fight against the trade cycle. It is now being increasingly recognised that both monetary policy and budgetary policy can be utilised by the state to check the courses of the trade cycle. The part played by monetary policy has long been understood in this connection. Since the thirties, the important part that the budgetary policy can play has become clear. A depression is one primarily to a deficiency in effective demand. Such a deficiency can be cured by the government, if it reduces its taxes and increases its expenditure. During a boom, the government should raise tax rates and cut down its expenditure. If private investment is shy and unenterprising, the state may fill the gap by increasing public investment in various ways. It may, for example, start more public works.

The state and economic planning. Now-a-days we are all planners, and the modern state is required by the public opinion of the country to formulate an economic plan or plans to carry out certain basic ideals. To plan is to organize in terms of some particular ends. If we decide to go to a place, we have to plan the details of our journey, *i.e.* find out the times for the departure of our train, purchase a ticket and do many other things to ensure a safe and pleasant journey. An economic plan is a method of organizing and utilising the available resources of a country for the purpose of fulfilling certain desirable ends. The modern state is expected to formulate such an economic plan or plans.

A preliminary question has got to be answered first of all. Is it really necessary or desirable for the state to formulate a plan for the development of the resources of the country? Why plan at all?

Why plan at all?

Does not the present system of free enterprise with its sensitive market price mechanism ensure the attainment of all desirable objectives? The system of free market price mechanism may have many important advantages. Under ordinary circumstances it may secure many of the benefits we want. But when large and rapid changes are taking place

in the economy, or when such changes have to be brought about, the uncontrolled pricing system would often fail to cope with the effects of such changes or to bring about the necessary changes. This is specially true of the undeveloped economies. For such countries it is urgent that measures for their rapid development would have to be undertaken. Private enterprise may fail and has often failed to take the necessary risks of pioneering in an otherwise unchartered territory. Secondly, private enterprise does not always secure a more equal distribution of the benefits of economic development among the different classes of people. There is no guarantee that the working of the free pricing system would ensure a satisfactory distribution of the national income of the country among all classes of people. On the other hand, that system has caused shocking inequalities of income and property. The developing social conscience of the people is not prepared to tolerate the existence of such grave inequalities, and a large section of public opinion holds the view that the state should control the resources of the community so as to secure a better distribution of the national income among all classes of people.

There is a third reason why the state is required to form an economic plan. The working of the free pricing system has failed to solve the problem of mass unemployment. Everybody is now agreed that the acute state of mass unemployment which existed during the nineteen thirties should no longer be allowed to recur. Many people have further argued that the state should formulate an economic plan for the development of the resources of the community so as to ensure full employment for everybody.

Moreover, the need for a planned development of the economic resources is now being felt in almost all undeveloped countries. The rate at which unplanned private enterprise would secure the development of such countries is regarded as insufficient. These countries have started late, and now want to pack the development of centuries into a few years. They want to raise the standard of living of the people to a level which is considered adequate according to modern standard. Hence the whole structure of the economy of these countries has to be changed on a scale and

with a speed which is not capable of achievement by private enterprise. There are so many unknown risks and so many unchartered territories to conquer that private risk-bearers cannot plan their operations. The development must proceed at such a rate that the general structure of relative supplies, and of relative prices and costs will change extensively and rapidly. In such circumstances, there is a strong argument for the state to plan the whole development of the resources of the country.

An economic plan is associated with some end or ends which such planning is expected to achieve. Secondly, since planning means organizing the resources, one must possess complete knowledge of the available resources and the methods of utilising these resources. In order to formulate an economic plan, we must, first of all, be clear as to the ends to be pursued, and then find out the available resources. Moreover, planning indicates the existence of a centralised authority at least for the purpose of formulating, initiating, inspiring and regulating all individual and separate plans, enterprises and industries.

Objectives of planning.

The selection of the objectives of planning depends to a large extent on the economic conditions of a country, and the policies of the government. There may be a number of competing ends to be pursued,—for example, full mobilisation of resources for military purposes, or full employment, or the establishment of a particular pattern of society, or maximum production etc. In the economically advanced countries, plans may be formed for the purpose of abolition of the cyclical fluctuations or for the achievement and maintenance of full employment. In under-developed economies, the ends may have to be modified to some extent. It is quite possible, that in such countries there are no adequate supplies of capital equipment for idle labour. Hence the goal of full employment may have to be modified. Finally, all such ends may be combined with the objective of a reduction in the economic inequalities in the country. In fact, economic equality and social justice are now-a-days regarded as highly desirable objectives, and a carefully worked out policy for the achievement of these two objectives is often made an

integral part of all plans. Each one of these objectives is therefore desirable, and everywhere planners have tended to work on the basis of a compromise between these objectives, laying more stress on some and less on others. This problem of choosing between different objectives is not, however, peculiar to planning. It is implicit in all economic decisions. The selection from among these objectives has to be made partly on the stage of economic development reached by a country, and partly on the basic values of life accepted by the people of that country.

Economic plans may be formed and carried out in any form of economy, both capitalistic and non-capitalistic. In a totalitarian country, the state controls all aspects of the economic life with an iron hand. This facilitates the implementation of the plan. There is an all-powerful central authority which exercises full control over all parts of the economy. This organization secures an effective coherence of policies, and can easily adopt all practical measures which are essential to successful planning. Whatever the merits a totalitarian country possesses in respect of the successful implementation of economic plans, it involves the sacrifice of certain basic values, which are highly prized in many countries. It contains a threat to personal freedom, and other democratic rights of the people. There is no reason why planning should not be successfully carried out under the democratic system. Planning under the democratic system, is of course more complicated, and it makes larger demands on both the government and the people than under a totalitarian system. All that is necessary is that the objectives to be pursued and the sacrifices to be made should be voluntarily accepted by the people.

Merits of planning.

The formulation of an economic plan has thus some obvious advantages. It may enable a country to secure a well-co-ordinated development of its resources, and to attain a reasonable standard of living for general population within the shortest possible period of time. It may help in preventing the recurrence of mass unemployment, to avoid the anti-social wastes of the competitive system and to secure a more

equitable distribution of income and wealth. But the dangers and difficulties of planning should also be noted.

Dangers of planning.

In the first place, economic planning by a centralised authority means the creation of a most complex administrative machinery with all its clumsiness, red-tapism and other dilatory methods. Secondly, such planning involves concentration of all powers of decisions at the hands of a central authority, and this carries with it a threat to democratic rights. It threatens our freedom of choice as consumers. It involves the danger that our lives and livelihoods will be regulated by the arbitrary decisions of an anonymous government official. Thirdly, as planning involves control and direction of the economic activities of the country by a set of officials, it may become the breeding ground for corruption and for black markets. When officials are authorised to issue the permits or licenses, which may be of great value to the fortunate few, they may succumb to the temptation of the offer of large bribes. Planning may, therefore, prove to be a threat to public morality. Lastly, under the system of centralised planning, the repercussions of a mistake committed by the planners may affect the whole economy. Inefficiency in high authorities may thus paralyse the working of considerable sections of the economic organization of the country.

The modern state is, therefore, faced with this dilemma. Social processes are complex, and if unattended, they give rise to grave evils which the growing conscience of mankind is not prepared to tolerate. There has emerged now-a-days a great awareness and insistence on certain basic values. A correction of these evils and the attainment of the basic values call for the intervention of the state and the formulation of some economic plan. But planning cannot be carried out without a huge bureaucracy with all its attendant evils of clumsy inefficiencies and dangers of loss of personal freedom.

CHAPTER LVI

SOCIALISM

Throughout this book, we have tried to explain as fully as possible the economic phenomena of the present social order. A large number of people in all countries are, however, dissatisfied with the present social system, and would like to reconstruct it thoroughly. The most important of these proposals of reconstruction is socialism. From a theoretical discussion the doctrines of socialism have assumed great practical importance on account of the establishment of the Soviet Government in Russia. In this chapter we proposed to examine some aspects of the socialistic doctrine.

What is socialism? The writers on socialism are not agreed on the correct definition of socialism. There are, however, certain essential features in most of these definitions. Socialism implies the ownership of the means of production by the society as a whole. Under the capitalist system, the means of production (like land, mines, factories, railways etc.,) are owned by a small section of people who work them with a view to derive the maximum profit for themselves. In a socialistic state, there will be no such private ownership. The state would own the means of production collectively, and operate them for securing the maximum benefit to society. As a result, the vast majority of the people who are now propertyless will no longer be exploited by a small group of capitalists. Dr. Tugan-Baranowsky found the essence of socialism to lie in the fact that under it, the exploitation of any member of the community is impossible. The profit-motive which drives the present economic order will be replaced by the more rational one of maximum welfare for all sections of people. The decision as to what and how much to produce will no longer be decided by considerations of profit. These decisions will be reached on the basis of the usefulness of such things to the society. In the place of a blind working of the productive forces there will be central planning of the economic life of the country. The various branches of production will be

developed harmoniously by a Central Planning Authority to serve the best interests of the society as a whole.

Marx and socialism : The history of socialistic thought can be traced to early days, though it is usual to associate the movement with the name of Karl Marx. In England, for example, Robert Owen conceived the idea of voluntary communities where all property would be held in common, and the proceeds would be shared equally by all the members, long before Karl Marx. In France, Charles Fourier held similar ideas. These writers were known as utopian socialists. Modern socialism, however, dates from the writing of Marx, and Engels who published their famous *Communist Manifesto* in 1848. In that *Manifesto,* Marx and Engels traced the historical rise of the modern capitalistic system. The foundations of Marx's thesis lay in his concept of "materialistic interpretation of history." All social and political history is the result of the conflict of economic classes. Wherever a society is divided into different economic classes, a conflict of interests is bound to develop between these classes. These conflicts give rise to certain social and political developments which constitute the history of the country. The division of the people into economic classes is the creation of the system of production of the country. There was always some alignment of classes. Thus in ancient times there were slaves, the plebian, the patrician. In the mediæval period, there were Serfs, Vassals, Knights and the feudal Lords. The interests of these classes clashed, and this gave rise to the prevailing social and political changes. The last important change of this type was the emergence of the present capitalist system which developed with the widening of the market and the growth of wealth. The bourgeoisie rose and overthrew the feudal lords. The rise of this class to prominence gave birth to important social and economic changes which were the essence of capitalism.

Decay of capitalism inevitable.

Capitalism will, however, give rise to conditions which will lead to its overthrow. Under it, the society has been divided into two classes, the capitalist and the wage-earner, and as before, there is bound to be great conflicts of interest between these two classes. Marx believed that there were

two prominent trends in the growth of capitalism, which would lead to its downfall. The first was the gradual concentration of production and income in the hands of a smaller class of people. Large-scale industry would grow up, and would swallow the small industries. The second tendency would be an increase in the number of wage-earners, and the gradual pauperisation of the labouring classes. The concentration of production in a few hands would push a larger and larger portion of the people into the ranks of wage-earners. Not only will the ranks of labour be swelled, but the tendency of the actual social movement would be to rob more and more the lower and poorer classes for the benefit of the higher and richer classes. At last the working classes will rise, and will oust the capitalist from control. All means of production will then be owned by the state, and the government and industry will be carried on in the interest of the working classes. There will then emerge a class-less society whose evolution is inevitable under the present-day conditions.

Such was the Marxian analysis about the course of events. Certain comments may be made at this stage. Growth of capitalism has, of course, led to the concentration of production. But concentration of industry has not necessarily involved the concentration of ownership. The number of small businessmen is of course decreasing. But the organization of the businesses on the joint-stock principle has enabled a large number of people to have shares in the ownership of giant businesses. Nor has the development of capitalism led to the pauperisation of the labouring classes. The existing inequalities of income are of course glaring. But these have not grown greater since the days of Marx.

Types of socialism : The natural trend of discussion about the materialistic interpretation of history is that socialism will inevitably come after capitalism. But by the end of the 19th century many socialists became conscious that the tendencies pointed out by Marx were not working out as predicted. In the meantime everywhere the socialists were gaining ground as a political party. Hence arose a division between socialists,—between those who were regarded as evolutionary socialists and those who were called

revolutionary socialists. The former adhered to a programme of a gradual reconstruction of society after a peaceful capture of political power and votes in a democracy. The Fabian Socialists of England fall in this class. The second group wanted a violent overthrow of capitalism, and the establishment of worker's control by force.

Syndicalism.

In the meantime socialist thought was also falling into different groups. Apart from collectivism which would have state ownership of the means of production, there developed a new revolutionary movement which had its origin in France. It came to be known as Syndicalism, and derived elements from socialism and trade-unionism. Instead of all industry being controlled by the state, each industry would be controlled and managed by syndicates or trade unions. Thus the ownership of industries would rest in local syndicates in the case of local industries, and in national syndicates in the case of national industries. Thus the state would be a loose decentralised federation of more or less independent units. And unlike other socialists, syndicalism placed its reliance upon sporadic strikes, sabotage and the general strike to bring about a collapse of the present system.

Guild socialism.

Another school of thought developed in England. It aimed to retain the present state which would own all the means of production. But the industries would be managed, not by the state as in collectivism, but by industrial guilds, consisting of all workers, technicians and managers. Thus the railways were to be managed by railway guilds. This school is known as guild socialism and was thus a compromise between syndicalism and collectivism.

Communism.

The third group called themselves communists, to distinguish themselves from the evolutionary socialists. Communists believed that socialism could be introduced at once, and by force. Unlike the Socialists, they do not believe in political democracy and in universal suffrage, or in the rule of majorities,—though of late Russia has introduced these in 1936. The communists want to establish a "dictatorship of the proletariat" through violent revolutions. The method of distribution of incomes

is also different to some extent from that in other kinds of socialism. The main formula is that "from each according to his ability, and to each according to his need."

Soviet Russia: It is necessary at this stage to describe the communistic system introduced in Russia. On coming to power in 1917, the communists proceeded immediately to nationalise the land. But the peasants were granted "possession" over their holdings, subject to the condition that the surplus produce was to be given to the state. By 1919, all the mines, factories, banks, transport and foreign trade were completely nationalised. But this was soon followed by certain difficulties. The land policy discouraged production on the one hand and resulted in secret dealings on the other. The government was unable to secure much machinery and railroad equipment from foreign countries. It also failed to secure the co-operation of the former managers and technical experts of the factories. The breakdown of the productive system was so great that for the time being the Russian government was forced to retrace its steps to some extent. The N. E. P. (New Economic Policy) was adopted. The peasants were granted the right to dispose of their surplus products. There was also a partial return to private enterprise in small-scale manufacturing and in domestic trade. "Concessions" were granted to foreign concerns and even to "mixed" concerns in certain special spheres (as in the case of Lena gold fields). This policy remained in force till 1928, from which year a big change in policy ensued. There began an era of economic planning, and large-scale industrial and agricultural development. A five-year plan was adopted, and special attention was devoted to the development of the heavy industries, coal, electrical energy, machinery and tractors. A new agricultural policy in the shape of collectivisation of farms was also introduced in 1929. Land and the animals were placed under the control of big collective farms, which were supplied with tractors and other agricultural machines. Many peasants resisted the introduction of this policy, but it was carried out ruthlessly, causing a good deal of suffering. A second five-year plan was adopted in 1933, and it paid more attention to the development of light,

Russian communism.

manufacturing industries and production of consumer's goods. In this way, the initial shortage of goods was made good. By 1935, the system of rationing was abolished.

It should be noted that in Russia the principle of equality of incomes has not been adopted in fixing wage-rates. Payment is made according to the social value (*i.e.*, scarcity) of a particular group of labour, or according to the technical skill required in any job. While the average workers are paid modest salaries to maintain a national minimum standard, the outstanding men and women are paid much higher salaries. The extent of inequality of incomes prevalent in the U.S.S.R. is often as great as that in a capitalist country. It has been urged by many that this is against the strict communistic principle. But this is not correct. Marx pointed out that differences of wages, proportional to differences in the quantity and quality of work, would exist in the first stages of socialism. When production will increase so much as to provide sufficiency for all and when classes have been abolished long enough for people to be changed, the communist principle of "to each according to his needs" will be introduced. But in spite of the existence of such inequality of incomes, the system is claimed to be superior to the present one as there are no property or unearned incomes, and nobody gets any income unless he works.

Inequality of incomes.

Value in a socialistic state : A few years back a group of economists raised the problem of valuation in a socialistic economy. Are the general conclusions regarding value and distribution, deduced by the economists, applicable to the case of a socialistic economy? Under a competitive system, the producers will be guided by the prices prevailing in the markets for goods and factors. Each will produce upto the point at which his marginal costs are equal to the price. The different factors will also be distributed among the industries in such a way that their marginal net products are equal to the average rates of remuneration. And provided there are no divergences between the marginal private net product and the marginal social net product, this would secure the maximum satisfaction from the available resources. But

under socialism, as Prof. Mises[1] pointed out, there is no free market in the factors of production as these will be owned or employed by the state. In the absence of free markets for factors of production, their prices cannot be determined. Without such free pricing, there can be no rational calculation of costs and prices. Hence it would be impossible for a socialist state to maximise production.

This challenge was later taken up by Dr. H. D. Dickinson, Lange and Taylor and other writers. The capitalist system does not always maximise satisfaction or output. The writings of Marshall and Pigou have long pointed out the existence of many divergences between the marginal social net product and the marginal private net product. Moreover, market prices are not always fair guides to production. Prices which prevail under the competitive system are based upon the demands of consumers at the existing level of incomes. Hence they tend to distort the productive system heavily in the direction of satisfying the frivolous wants of the richer classes to the exclusion of the more pressing needs of the poor. There is also a good deal of waste and inefficiency under capitalism. As early as 1908, Barone, an Italian economist, expressed the opinion that in principle the accounting prices of a socialistic economy were economically as significant as the market prices of a capitalist economy. By means of a series of simultaneous equations, he proved that a socialistic economy could make a rational allocation of resources in substantially the same way as capitalism. Similar conclusions have been reached by Dickinson, Oscar Lange, Durbin and others. "Pricing is independent of any particular organization. Mises has confused the essence of the pricing process with the particular form under which it is manifested in the capitalist economy." The absence of a free market in a socialistic economy does not introduce any fundamental difficulty. Prices may be assumed for accounting purposes for the allocation of resources. A provisional valuation in terms of money may be imputed to each factor. For example, the Central Planning Authority may start with prices already given in the market much in the same way as capitalists do. That Authority may then

[1] *Socialism* by Ludwing Von Mises.

proceed, by the use of statistically determined demand and supply schedules and on the basis of trial and error, arrive at the correct accounting prices. If it happens that the quantity demanded of a commodity is not equal to that supplied, the price and output of that article have to be changed. There will be a new set of prices, and alterations in the quantities produced. By this process of trial and error, a point of equilibrium will be reached when the quantity demanded will be equal to that supplied. This is exactly the way in which prices are actually determined in a competitive economy.

Merits : Not only is rational allocation possible in a socialistic economy, it is also superior to the competitive system on a number of points. First, as the Central Planning Authority has a greater knowledge about the supply and demand positions than a number of isolated entrepreneurs, it can reach correct equilibrium prices more quickly than the latter. Secondly, a socialistic system, by providing for a better distribution of incomes, will tend to secure a greater satisfaction of wants than is possible under the present order. It will not follow the whims of the rich few, but will devote the resources to satisfy the more urgent needs of the majority of the people. It will thus derive a larger amount of satisfaction from a given output. Lastly, under capitalism, the system of production is anarchic, and periodic crisis is bound to occur. But by taking a long-range view-point, the socialistic economy can control the fluctuations of the trade cycles much better than the present order. It will also tend to reduce those risks and uncertainties which exist in the present society owing to unbridled competition. It would avoid the wastes of the competitive system.

Merits of a socialist system.

Against these advantages of a socialist system must be set certain inherent difficulties. Prof. Pigou, after accepting the contention that in principle the optimum allocation of resources can be made in a socialistic economy on the basis of what he calls "accounting cost," pointed out that in practice it would mean great difficulties. The solution of this problem would require the genius of a group of supermen. Secondly,

Difficulties of Socialism.

will the socialistic system be able to maintain its productive organization to the highest pitch of efficiency? In a competitive system, the fear of loss or the hope of pecuniary gain serves to keep the entrepreneurs alert and efficient. But in a socialistic economy the manager of a production unit will get a fixed remuneration. Any loss incurred in his factory will be borne by the community. Hence he need not be very careful in the management of his factory. This may prove to be a source of weakness in a socialistic system. But it should be recognised that Soviet Russia had apparently solved this difficulty by introducing such incentives as the spirit of emulation, the desire for public honour and the dread of public censure, etc.

Another difficulty will be the determination of the correct rate of capital accumulation. The decision of the Central Planning Authority is bound to be arbitrary, and the economy may suffer from a wrong rate of capital accumulation in the long run. It is, however, true that a rate of interest as determined under a capitalist economy on the basis of the consumers' preferences for liquidity may not always prove superior, from the strict economic standpoint, to one determined by the Planning Authority. A fourth difficulty will be the selection of the best men for the various posts. The capitalist system is of course not the ideal for this purpose. But it at least provides a rough and ready way of throwing out the fittest men. This is no doubt imperfect. But the socialists have not proposed a better method of adjusting capacity to task, and of detecting the natural leaders of men. Lastly, the real danger lies in the bureaucratic management of the economic life under socialism.

But to point out the difficulties of a socialist economy is not to argue that socialism is "impossible." The real alternative is not between the ideal capitalism and blind socialism. The present system has failed to achieve in practice what its apologists consider it to be potentially capable of achieving. Hence the only valid comparison is between an imperfectly competitive economy which has to be propped up by interventionist measures and a socialistic system with all its attendant difficulties. And the comparison is not always in favour of the former.

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